

VOLUME VIII

NO. 5

WESTERN INDUSTRY



Twenty-Five Cents

May, 1943

VICTOR



They can do a better and more dependable job for you with the proper eye protection and adequate safety clothing. A complete assortment of everything needed by the man or woman welder or burner is available in all VICTOR stores.

Over three decades of specialized experience in the welding industry offers these men and women not merely quality products but the advice of experts.



(Communi
wishes, bi

Stand

FOL
Sov
Club, f
greater
Develop
nationa

"W
tain
tation
Econo

"It
now t
Along
origin
form
this o
tradin

"A
dorm
in ord
able t
very
as exp

Fr
forn
on th

"I
given
the C

"I
be in
prob
work
are
they
natio
spea

"I
anne
and
that
not
ever

"
othe
to c
firs
my
est
tru
tra
its

EDITORIAL COMMENT

(Communications on any subject of interest to our readers are welcomed. If author wishes, his name will not be used. Unsigned contributions will be disregarded.)

Stand Appreciated

FOLLOWING is an expression of appreciation from John A. Sowers, president of the Oakland Foreign Trade and Harbor Club, for the editorial in the March issue urging the necessity of greater Western representation on the Committee for Economic Development, which at the present time is industry's organ for national post-war planning:

"We wish to congratulate you on the editorial comment contained in your March, 1943, issue with reference to the representation of the West on the Board of Trustees of the Committee for Economic Development.

"It is highly important that Western interests make every effort now to secure proper representation in any post-war planning. Along this line it was my good fortune to be a member of the original committee that met in Portland the latter part of 1941 to form the Pacific Trade Council. As you may recall, the purpose of this organization was entirely to present a united front for the trading interests of the West.

"At the present time the Pacific Trade Council is somewhat dormant, and in my own case, having left the foreign trade field in order to work with the War Production Board, I have not been able to participate in any of its plans. However, I believe it has a very important future and is certainly in line with the sentiments as expressed in your editorial."

From Herbert F. Ormsby, director, Research Department, California State Chamber of Commerce, comes the following comment on the same editorial:

"I noticed your editorial to the effect that the West has been given the "Brush-off" in the set up of the Board of Trustees of the Committee for Economic Development.

"I do not disagree with your general thesis that there should be independent Western study and action on post-war economic problems, but from discussions with Scott Fletcher and other men working on the C.E.D. activities, I am led to conclude that they are in entire agreement with that viewpoint. I am assured that they have no intention of engaging in any overall planning of national or regional economic development, or of attempting to speak in behalf of all business on questions of national policy.

"If that premise is correct, and they do stick strictly to their announced purpose of stimulating and assisting various industries and various communities to *develop their own plans*, then the fact that their small executive committee or Board of Trustees does not give precisely balanced representation to every region and every line of industry in the nation is not of such great importance.

"I think there is a widely prevailing misconception that this or other committees on post-war economic development are going to engage in overall economic planning. The very fact that the first reaction of every individual concerned is that my industry, my community or region, my class of people, or my peculiar interests are not properly represented and therefore cannot be entrusted to any "master planners" in that group, is a perfect illustration of the reason why no small committee of that sort can set itself up to do overall planning."

WESTERN INDUSTRY

News, Methods, Solutions to Problems of the Principal
Manufacturing and Processing Industries of the West

CONTENTS FOR MAY, 1943

Editorial Comment	3
Spotlight on the News	11
West Responds to War Challenge	13
Western Industry in Pictures	14
N. A. M. Conferences Held in Coast Cities	15
Western Firm Creates CMP Record System	16
Kaiser Ship Failure Causes Analyzed	18
Squeaks, Scale, Journey Slow, Delays Our Date in Tokyo	20
N. A. M. San Francisco Meeting in Pictures	22-23
Tube Mill for Pacific Coast	24
Draft Board Bulletin Is Key to the Future	26-27
New Officers Here and There	28
Labor and The Industrial West	30-31
Predicts Big Market Ahead	32
Wenatchee Fruits by Air Transport Likely	33
The West on Its Way	34-38
Western Trade Winds	39
Yours for the Asking	40
The Showcase	41-42
Advertisers' Index	42

OUR COVER PICTURE

• More uses are being found for wood today than were dreamed of a few years ago, matching many of the developments in metals. Here is a log coming up out of the pond at one of the Weyerhaeuser lumber mills in the Pacific Northwest, ready to be transformed into some item of war service, direct or indirect



Member Controlled Circulation Audit

25¢ PER COPY

\$2.00 PER YEAR

Published by King Publications

503 MARKET STREET

SAN FRANCISCO, CALIF.

A. C. PRENDERGAST, Editor

Washington Office: ARNOLD KRUCKMAN, Associate Editor, 1120 Vermont Ave., N.W., Telephone: DIstrict 8822.

Los Angeles Office: JACK O. HODGES, District Manager, 479 South Holt Avenue, Telephone: BRadshaw 2-3935.

Seattle Office: ARTHUR G. LOMAX, District Manager, 2267 East 62nd Street, Telephone: KENwood 5494.

Copyright 1943 by King Publications



Cool light means efficient light

● There is a reason why cool fluorescent light is the most efficient practical light known. It's simply because a fluorescent lamp transforms electrical energy into more light and with less heat than other light sources.

For fluorescent light production involves an electro-chemical process rather than a heat process. That is,

ultraviolet radiation of a precise wave length causes the fluorescent powder coating inside the tube to emit light, rather than heat energy in the form of invisible infrared radiation.

And there is a reason why Sylvania Fluorescent Lamps are as coolly efficient as modern research can make them. Sylvania engineers have drawn on years

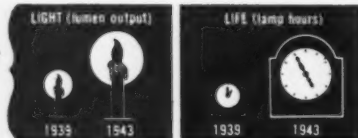
of specialized and basic experience with incandescent lamps, radio tubes, ultraviolet lamps and other electronic devices. Their aggressive and independent research has helped to make fluorescent a "must" for precision war production, and the best lighting for your home when Victory is won.

Sylvania's tireless research makes continued and consistent improvement possible. For more output, longer life and uniform color—specify Sylvania Fluorescent Lamps in authorized new installations and replacements.

FAR MORE LIGHT AND LIFE FOR YOUR MONEY

Compared with 1939 a dollar invested today in Sylvania Fluorescent Lamps buys more than four times the lumen output and approximately five times the lamp life.

SYLVANIA
FLUORESCENT
DOLLAR
BUYS:



(Based on decreasing price and increasing efficiency and durability of Sylvania 40-Watt White Fluorescent Lamp)

Even on existing circuits, a change-over to fluorescent—Sylvania Lamps, Fixtures and Accessories—will probably more than double the light you get for the same wattage.



SYLVANIA

ELECTRIC PRODUCTS INC.

Formerly Hygrade Sylvania Corporation
Salem, Mass.

INCANDESCENT LAMPS,
FLUORESCENT LAMPS, FIX-
TURES AND ACCESSORIES,
RADIO TUBES, ELECTRONIC
DEVICES.

He does MUCH MORE than MAKE them for mills and factories

HE MANUFACTURES more than 2000 types and sizes of chain belts. That is, however, only a part of his business.

His business is mechanical engineering, the design . . . manufacture . . . application . . . selling and maintenance of special apparatus for transmitting power and handling materials.

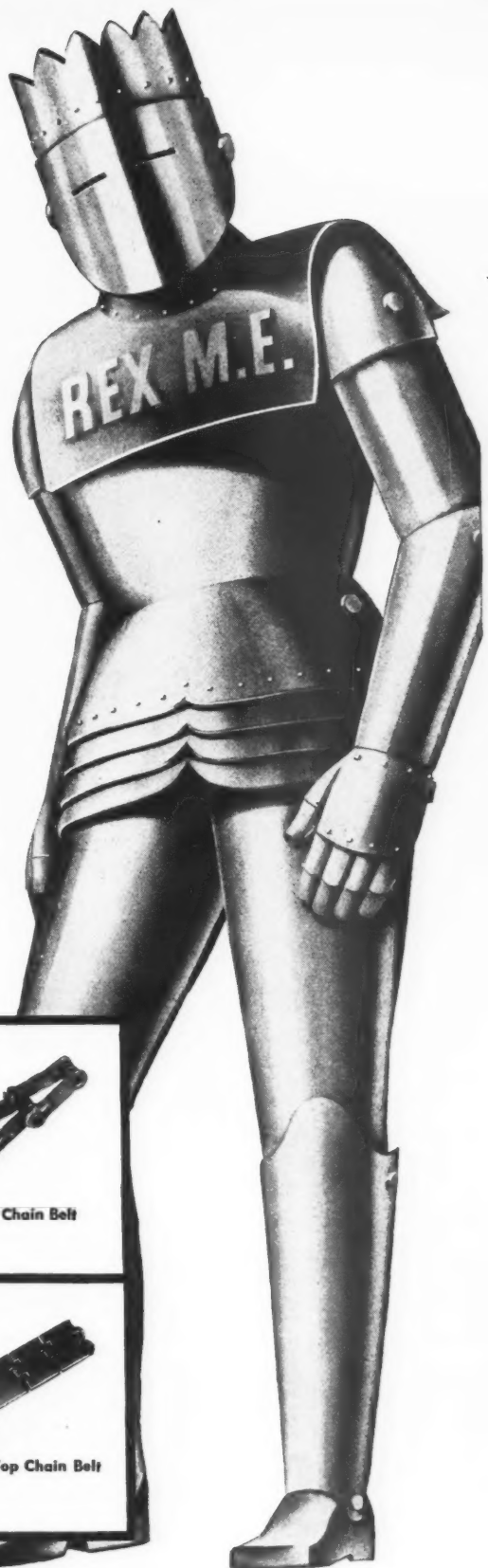
In order to design and manufacture his chain belts, Rex Mechanical Engineering—Rex M. E.—must perform the functions of application and selling. These are in some ways his most important obligations.

Because of the complexity of modern industry, all engineers must seek and get from each other the extensive and intensive knowledge that only specialization can provide.

Application and selling are the technical information services provided by specialists to help analyze difficulties and find the best ways for surmounting them.

For this service Rex Mechanical Engineering—Rex M. E.—maintains a field organization, most of whom have served their apprenticeships in his drafting rooms and plants. For additional counsel, the territorial men call on specialized designing engineers in Milwaukee who have the advantages of national experience.

Through the work of all of these men in many fields, Rex M. E. is learning—and making available—much that is helpful to maintenance engineers in the great work in which they are engaged, namely, to achieve a maximal result at minimal cost and waste.



REX

CHAIN BELTS

**In more than 2000
sizes and types**



**Rex Chabelco
Steel Chain Belt**



Rex Pintle Chain Belt



Rex Roller Chain Belt



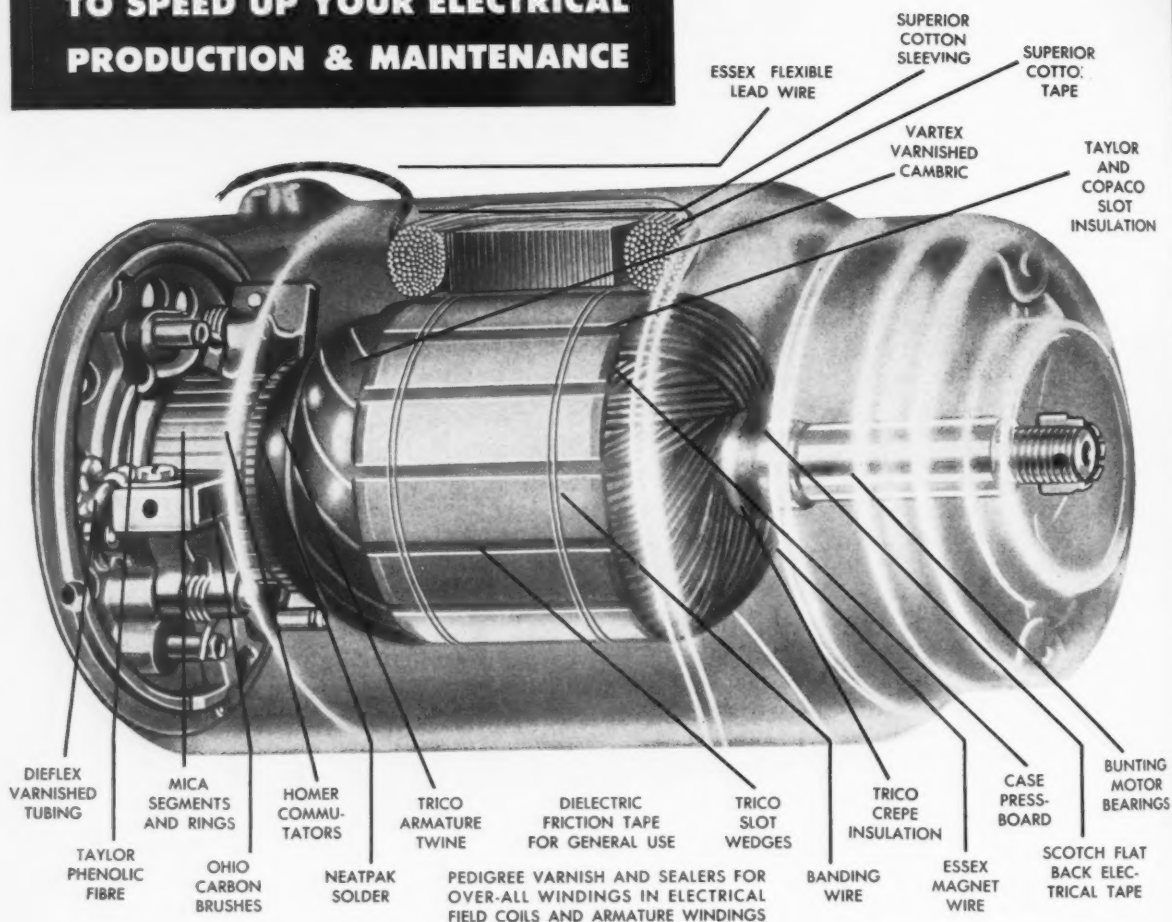
Rex Table Top Chain Belt

Rex Chain Belts which are made in malleable iron are also furnished in Rex Z-Metal, a superior material for cast chain belts. Many other chain belts are made of steel for the heaviest services or highest speeds. There is a Rex chain belt for every drive and conveyor. For further information, write Chain Belt Company, 1723 West Bruce St., Milwaukee, Wisconsin.

CHAIN BELT COMPANY OF MILWAUKEE



HERE'S HOW TO SPEED UP YOUR ELECTRICAL PRODUCTION & MAINTENANCE



Expediting, engineering and warehousing are three of the many Tri-State features to help keep electrical wiring and winding production lines rolling at top speed. Wire products, brushes, resistors, insulation, varnishes, bearings and tapes are a repre-

sentative few of the materials available for use in the production and maintenance of motors, generators, starters, transformers and relays. Priority rated materials arriving from 8 large factories weekly.

Check with Tri-State Supply to discover how their services can be utilized in scheduling your production—how it helps to keep your electrical production moving at top speed. Write, phone or wire Tri-State Supply Corporation.

TRI-STATE SUPPLY CORPORATION

544 S. SAN PEDRO STREET, LOS ANGELES, CALIFORNIA • MUTual 2354

554 BRYANT STREET, SAN FRANCISCO, CALIFORNIA • EXbrook 8890

**Plain AND Porous BRONZE
BUSHINGS DELIVERED ON
SHORT NOTICE**



**...SEND FOR
THIS FREE
84 page CATALOG**

This catalog lists sizes and prices of hundreds of finished bronze bushings and porous bronze oil-retaining bearings available on short notice. Also features complete range of sizes of cored and solid bronze bushing stock, as well as scores of bronze specialties. Send for this FREE catalog today.

**ATLAS BRASS FOUNDRY
INCORPORATED**

1905 - A SANTA FE AVENUE • LOS ANGELES, CALIFORNIA

how to DOUBLE THE LIFE OF YOUR WIRE ROPE!



1 Wire rope is a *machine*. In action its many wires move individually and twist around their own axes. There are hundreds of small surfaces where strands meet and slide over each other. Consequently it has to have a lubricant that will cover these surfaces with a protective film of oil, a lubricant that will *stay on the job!*



3 Unacal Cable Lubricant contains a "carrier" that goes straight to the core of the cable—evaporates—and leaves the lubricant where it can do the most good—*on the inside!* As the rope flexes and turns, the lubricant works around every strand, protecting it from friction, rust, and wear. It's thick enough to prevent throw-off at high speeds, viscous enough to prevent cracking and flaking at low temperatures.

Manufacturers say wire rope will last twice as long with proper care and lubrication. Here's how Union Oil Company can help you get that kind of service from your cable.



2 UNACAL CABLE LUBRICANT does just that! Engineers have built into this product an amazing quality. Unlike other lubricants that work from the outside in, it penetrates to the *inside* of wire rope and *then works out.*



4 So call your Union Oil Resident Manager for a supply of Unacal Cable Lubricant today and get his advice on how to clean wire rope. No lubricant can do a job when applied to wire rope that is covered with dirt or rust.

OIL IS AMMUNITION—USE IT WISELY!

UNION OIL COMPANY

EBONCUP GREASES—Union Oil Company's Eboncup greases have excellent heat and water resistant qualities. Do an outstanding job in protecting wheel bearings or ball bearings.

UNOBA GREASES—contain a barium soap base that gives them high resistance to both heat and water. These greases are so versatile that they qualify for hundreds of industrial uses.

PURE PENN WORM GEAR LUBRICANT—Outstanding lube for all types of worm gears, particularly under heavy duty conditions. Extremely stable, cuts wear to a minimum.



WESTERN INDUSTRY—May, 1943



Old friend arrives . . . Thanks to you

When you're halfway around the world, trying to finish an important job, it's mighty pleasant to greet an old and very helpful friend you used to work with.

Back home, in scores of industries, the men now on palm-fringed shores learned an affectionate respect for the dependability of Wickwire Rope. Now when stout wire rope is more than ever a matter of life and death, the sight of a reel of *Wickwire* Rope brings double cheers.

These buddies of ours know that *you* need Wickwire Rope, too—to help in your speeded-up production of lots of things for them. So they're grateful when you make each length you now have last longer, so that more Wickwire Rope can be used to equip the

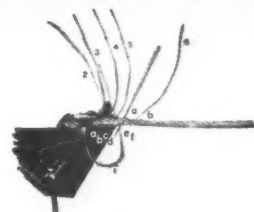
Liberty Ships, and to send overseas.

But when you do need more of this friendly Wickwire Rope to help maintain your war-production pace, won't you please order it *without* reels, if lengths will permit, so that handier reels can be spared for the boys out there? Wickwire Spencer Steel Company, 500 Fifth Avenue, New York.

. . .



Wickwire Spencer was the first manufacturer in all New England to be awarded the Maritime and Victory Fleet Flag for outstanding production accomplishments!



DO YOUR MEN KNOW HOW?

Our free book "Know Your Ropes" pictures the best ways to splice, attach sockets, etc. Also shows the right and wrong ways to use wire rope. In the hands of new men (and even old-timers) it can help you make your present wire rope last longer. Send for a free copy.

SEND YOUR WIRE ROPE QUESTIONS TO WICKWIRE SPENCER



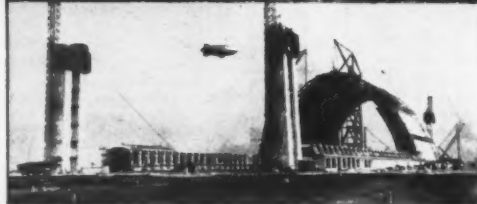
WICKWIRE ROPE

Sales Offices and Warehouses: Worcester, New York, Chicago, Buffalo, San Francisco, Los Angeles, Tulsa, Chattanooga, Houston, Abilene, Texas, Seattle. Export Sales Department: New York City





The **TECO** Ring Connector spreads the load on a timber joint over practically the entire cross-section of the wood . . . brings the full structural strength of lumber into play.



New Navy Blimp Hangar, 1000 feet long; 153 feet high; clear-span roof 237 feet. Timber treated for fire resistance according to Federal specifications. Trusses prefabricated by Timber Structures, Inc., Portland, Oregon.

TIMBER ENGINEERING COMPANY OF CALIFORNIA

85 Second Street, San Francisco, Cal.

TIMBER ENGINEERING COMPANY
Washington, D. C. Portland, Oregon

OUR NAVY BUILDS WORLD'S GREATEST TIMBER STRUCTURE

mammoth blimp hangar was made possible by

TECO CONNECTOR ENGINEERING

Two announcements of the widest import to American engineering have just come out of Washington.

The U. S. Navy has announced that a giant blimp hangar, engineered entirely in timber, is nearing completion "somewhere in the continental United States."

The War Production Board has announced that "such a structure could not have been built of wood by ordinary methods without the use of timber connectors . . . The steel ring timber connector, which is used to increase the strength of joints in wood construction, saved more than 400,000 tons of steel for essential war production in 1942." WPB added that 2,050 tons of structural steel will be saved in this hangar alone.

In erecting this vast, multiple-truss assembly, Navy engineers have accomplished a notable achievement in modern timber connector engineering. The hangar is the latest of scores of large Navy, Army, and Maritime Commission projects built with Teco timber connectors under the revolutionary Teco system of timber engineering. It is one of over 100,000 heavy-duty structures, of over 600 types, built under the Teco connector system in the past few years. They include clear-span factories, bridges and trestles, towers, tanks, warehouses, docks, shipyards, and many others.

Write today for our **FREE** Reference Book for engineers and architects showing 45 "Typical Designs of Timber Structures."

Spotlight

on the NEWS

WESTERN INDUSTRY
FOR MAY, 1943

VOLUME VIII NUMBER 5

Pacific Panorama

WAR booms and twists the Far West," says Raymond Reeves, regional business consultant of the U. S. Department of Commerce, in his first quarterly report for 1943. He dishes up the sweet in enticing fashion, but also ladles out big portions of the bitter, that those who look ahead may taste now and beware, instead of having it for the main dish next fall and winter.

Here is some of the sweet:

Oregon's second most populous city, Vanport, built in 110 days, has 40,000 inhabitants. One new Los Angeles aircraft plant employs more people than all of the Hollywood studios put together. Giant steel plant in full blast where an orange grove existed a few months ago. Wages swirling workers' pockets at a fantastic rate.

Change is Basic

But the real story of what the war is doing to this region is not found in such items as these. The change is deep and basic, for the area is being shifted from an agricultural to an industrial economy. Factories, raw materials, power, labor, supply and management which might take 50 years of normal development to obtain have all been thrust suddenly upon the Far West.

The new Pacific Coast aluminum plants have a capacity which exceeds the pre-war total of the whole nation . . . with almost half a ton of magnesium going into every large American fighting plane built, this industry (with the gigantic Basic Magnesium factory and the Permanente plant in California) is an important sector of an integrated airplane body-building industry for this region.

Lumber's new place signified by the largest privately owned wood products laboratory in the United States at Longview, Washington, to develop new wood uses, particularly in plywood, prefabrication and plastics . . . lumber being treated in 16

West Coast pressure treating plants to become fire-resistant.

Dehydrated vegetables may work a major upheaval in the West's basic canning, preserving, fresh fruit and vegetable industries, although much remains yet to be proved about dehydrating . . . oil companies are making synthetic rubber and huge quantities of ammonia available for a revolutionary fertilizer supply in peace time . . . crude petroleum now being converted into glycerine and vitamins can also be the basis of peace-time plastics.

Difficulties Ahead

But the bitter:

Farm labor shortage: 178,000 California acres planted to sugar beets last year, government requests 204,000 this year, but so far only 85,000 acres planted . . . labor supply at the heart of it . . . situation doubly acute because farms so near the shipyards and aircraft plants . . . absenteeism and labor turnover in war industries tremendous.

Grave impending crisis in transportation . . . railroad passenger traffic 241 per cent of five years ago, freight 187 per cent of 1937 level, Pacific Coast ports handling 37 per cent of national export tonnage . . . yet only single lines of rails connect large centers of population and supply . . . trains shuttled with but little headway between sections.

Transport Tangle

But the West is more dependent on the truck than any other area; trucks handled estimated two-thirds of all freight traffic in California last year . . . trucks most carry the burden, yet widespread breakdowns due to lack of equipment and parts, though the traffic peak is months away.

(Editor's note: And on top of this, the Interstate Commerce Commission by 6-5 vote has suspended until Jan. 1, 1944, the 6 per cent rail freight increase granted last year, which in turn would bear down truck rates. Legality of decision about to be challenged.)

Plane Parts Problems

Here is what the aircrafts parts manufacturers face in determining their costs, according to T. T. Arden, president of the Aircraft Parts Manufacturers Association, Los Angeles:

1. Repeat orders in large volume are not characteristic of aircraft parts manufacturers. There is a large variety and constant change in parts, so that it has not been possible to establish good volume production.

2. Shops operating with machine tools have encountered labor pains. There just isn't in this area a supply of skilled labor, so the labor is being trained, starting usually on the burr bench and upgrading, because there is considerable expensive equipment to be operated.

3. Some parts manufacturers have dealt almost exclusively in labor hours, the prime contractors having furnished the materials. In these shops where the material is furnished by the prime, the burden of spoilage has had to be borne by the subcontractor.

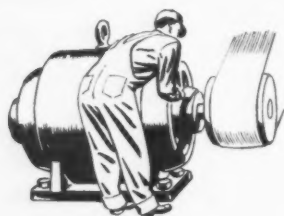
4. There is a need for fairness in treatment of a manufacturer who is definitely creative, the one who has engineered devices, accessories, controls, etc. The air corps has definitely neglected engineering originality in favor of standardization. In other words, some companies have been unable to produce their improvements due to the specifications having been already standardized.

5. The capital investment in machine tools is heavy in most shops and should be considered, especially in those that have come into operation since 1939. A large part of their amortization still has to be written off the books. Eastern manufacturers have long since paid for their tools. In order to keep production going, southern California plants have had to buy equipment which in many cases was not first class.



How to fight the invisible saboteur in your plant

Inside every plant is an invisible saboteur—*friction*. Hard-working machines are apt to break down, cause costly delays in production, unless precious equipment is guarded every moment with proper lubrication. This calls for a planned lubrication system, for using the correct lubricants. This is a job for your Associated Lubrication Engineer. Day after day Associated Lubrication Engineers are examining equipment in plants like yours. Their efficient lubrication suggestions have saved vital equipment from wearing out; have saved plant owners thousands of dollars. There's an Associated Lubrication Engineer in your locality. Why not discuss your lubrication problems with him? There's no obligation of course. It's just another Associated service.



Electric motors require special care. Check belt tension frequently as a tight belt puts excessive strain on bearings. Belts that are too loose

cause driven machines to operate at slower than normal speed. And, above all, lubricate regularly but moderately, in accord with the instructions supplied with the motor. Avoid overloading, keep commutator and brushes clean, make sure motor is free from moisture and dirt, inside and out. Checking your electrical equipment is one of the many things Associated Lubrication Engineers can do for you.



Diesel equipment will run better, longer, if you use top-quality fuel and lubricants. Associated Motor Diesel Fuel is an extra clean *distilled* Diesel fuel that prevents the formation of gum and carbon on the nozzle tips that lead to the cylinders. Cadel N.C. Diesel Engine Lubricant is a non-corrosive

oil that cleans while it works. Cadel N.C. adheres to metal surfaces, prevents dry starts, keeps parts rust-free. These two Associated Diesel products are popular wherever Diesel equipment is used in the West.

FREE TRUCK LUBRICATION CHARTS

Ask the Associated representative in your locality for FREE truck and tractor lubrication charts, for both gasoline and Diesel equipment. There's no obligation—it's another Associated service.

BUY AN EXTRA BOND

A FEW OF THE HUNDREDS OF ASSOCIATED PRODUCTS



Cycol Steam Cylinder Oils
Cycol Mill & Shafting Oils
Cadel N.C. Diesel Engine Lubricant

Associated Motor Diesel Fuel
Gasolines - Motor Oils
Fuel Oils

Let's get ASSOCIATED

TIDE WATER ASSOCIATED OIL COMPANY

Oil is Ammunition—Use it wisely!

West Responds To War Challenge...

INDEED the Pacific Coast has gone to war. And we are just gathering momentum. With the new manufacturing facilities we have but lately brought into production and shall bring into production during the present year, the record of 1942, I am confident, will be substantially outdistanced.

The most spectacular expansion in 1942 was in shipbuilding, now the largest industry in the district in terms of employment and payrolls. Tonnage of merchant ships delivered in 1942 was more than sixteen times the 1941 figure, and averaged a ship a day—with a total of nearly four million deadweight tons. This is in addition to the construction and repair of naval vessels. The Pacific Coast built over half of all the merchant ships constructed in the United States in 1942.

Our next largest industry in employment and payrolls, aircraft, has had a similar spectacular rise. The production in 1941, you remember, was in value nearly six times the production in 1939. The figures for 1942 are not given out, but we are told that both facilities and output have increased substantially over 1941—we have reason to suspect, indeed, spectacularly.

During the year there was further significant expansion in metal production and fabrication, not only in actual output but still more in construction of new facilities.

Additions to California steel mills raised ingot production 18 per cent. Production facilities having an annual rated output of 1,230,000 tons were under construction in Utah, a project to cost eventually as much as Boulder Dam; and the notable southern California project at Fontana, having an initial capacity of 450,000 tons of ingots, and for rolling 300,000 tons of plates, is scheduled for completion within the next few weeks.

During the year new alumina reduction plants and aluminum mills came into production, and a manyfold expansion in capacity for producing magnesium was developed.

Altogether factory employment in December 1942 in the three coast states (excluding fish, fruit, and vegetable canning) was more than 50 per cent higher than in December 1941; factory payrolls were nearly 100 per cent higher. The annual averages for the two years showed about

By J. D. ZELLERBACH
President, Crown-Zellerbach Corporation,
and Regional Vice President, National
Association of Manufacturers

the same ratios. The 1942 average employment in manufacturing in the seven states of the Twelfth Federal Reserve District, according to the United States Bureau of Labor Statistics, was 1,250,000; in 1939 it was less than one half that number.

It is worth noting, by the way, that the number of women wage earners in California durable goods industries increased between April and December 1942 from 19,000 to 112,000. In December, over 80,000 women were working in this state in the aircraft industry.

We have long looked forward to our potential electric power as a factor that would count heavily in our industrial development. We are advancing fast in the use of this asset. Our production has more than doubled since 1929, and in 1942 reached beyond 28 billion kilowatt-hours, nearly one-fifth of the United States total.

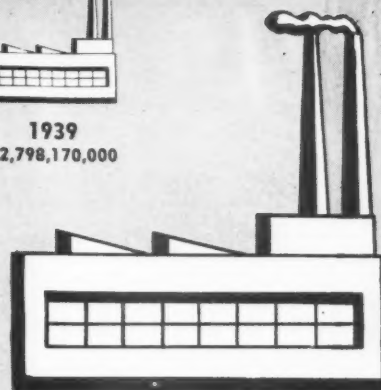
Meanwhile, our great California petroleum industry showed a gain in production, turning out more than 10 per cent of the world's total and more than the output of all the oil fields of Soviet Russia which Hitler has made such tremendous sacrifices in a vain effort to acquire. Natural gas and coal stepped up, too. Lumber and pulp and paper production went forward at an excellent pace.

It will be a surprise to many of you to learn that pulp mills of the Pacific Coast are supplying a very large part of the cellulose used in the production of nitrocellulose—smokeless powder. In this connection, it is encouraging to know that pulp, paper and lumber producers of the Pacific Coast are planning for the future by applying modern forest management methods to our vast forest holdings, which provide the raw material for the manufacture of lumber, pulp and paper products.

One segment of the Western industrial picture is shown in the accompanying illustration. Figures submitted by the Research department, California State Chamber of Commerce. Industrialization of other Western states is equally noteworthy.



1939
\$2,798,170,000



1942
\$8,500,000,000

VALUE CALIFORNIA MANUFACTURED PRODUCTS



1939
\$276,000
Equal to 3.5% of
total wage earners
in U. S.

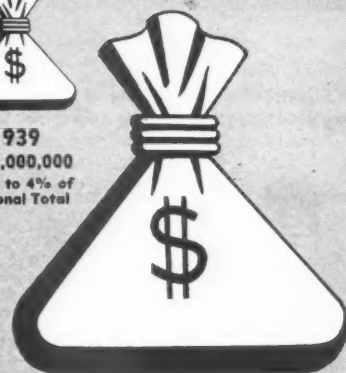


1942
\$671,200
Equal to 5.8%
of Total Wage Earners in U. S.

NUMBER OF FACTORY WAGE EARNERS



1939
\$366,000,000
Equal to 4% of
National Total



1942
\$1,473,749,000
Equal to 6.9% of National Total

PAYROLL FOR MFG.



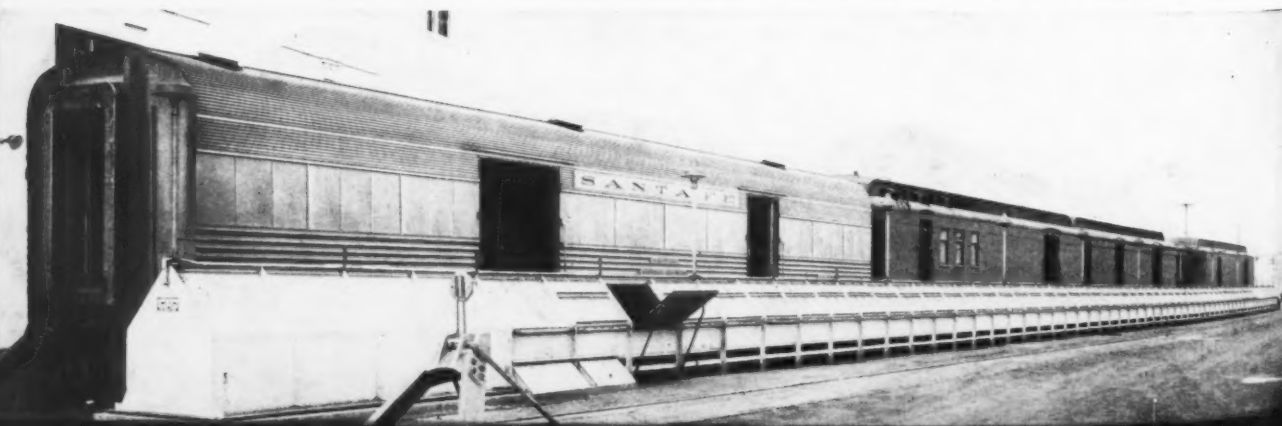
WESTERN INDUSTRY In Pictures

• New movable loading fork at Ryan Aeronautical Company, San Diego, operated by chain and crank to drag white-hot trays in and out of heat-treat furnace. Only one tray now worn out per day to former six, saving 385 lbs. steel daily



• Scarfing Sitka Spruce lumber for laminated airplane beams. The operator is scarfing—or beveling—ends of thin strips of wood to be glued together, making a larger piece. Thus can be secured a larger section of clear wood than by sawing a solid member, and by use of modern glues, joints as strong as the wood itself

• Simplified mail handling at Los Angeles union passenger terminal. Conveyor takes pouches direct from car door to post-office, eliminating usual lengthy trucking operation. Steel housing protects 42-inch belt, which travels 110 ft. per min., equipped with roller bearing idlers.



N
H
N

on the
Angeles
and Po

Presi
associat
of the
that th
nationa
the gat
war na

"I k
sion,"
industr
would
market
duce e
this co
tistics
increas
deman

NA
ping a
can in
but in
trade
against
compe
forced
other m
domes

J. I
dent,
of the
mands
13 of

Gro
vices
duction
outstar
guests

Qu
wage
repres
cies. I
follow

Co
chase.
Re
tion,
and t
maint
and p
turers
produ
comp
negot
20 pe

May

NAM Conference Held in Coast Cities

NATIONAL Association of Manufacturers held its annual series of Pacific Coast industrial conferences on the Pacific Coast last month, at Los Angeles, San Francisco, Seattle, Tacoma, and Portland.

President Frederick C. Crawford put the association on record as favoring renewal of the reciprocal trade agreements, saying that the country had outgrown economic nationalism. He called the Pacific Coast the gateway to two of the greatest of post-war nations—China and Russia.

"I know there is a widespread impression," declared Mr. Crawford, "that any industrial development in these countries would tend to reduce the potential export markets of American industries and to reduce employment and living standards in this country. But we have abundant statistics to show that, as manufacturing increases, so does buying power and the demand for imports."

NAM is opposed to abruptly dropping all tariffs to the ruination of American industry, according to Mr. Crawford, but in favor of a growing degree of freer trade than in the past, with protection against dumping and other destructive competition from countries employing forced labor, depreciated currencies or other means of underselling the American domestic market.

J. D. Zellerbach, regional vice-president, outlined the industrial development of the Pacific Coast to meet the war demands. His report is to be found on page 13 of this issue of *Western Industry*.

Groups of men from the fighting services and men and women from the production lines in war industries who had outstanding achievements were honor guests at the banquet in each city.

Questions of war contracts, manpower, wage stabilization, etc., were discussed by representatives of the national war agencies. Highlights of some of these were as follows:

Renegotiation

Col. A. J. Browning, director of purchases, U. S. Army Services of Supply:

Renegotiation necessary to prevent inflation, which excess profits taxes fail to do, and to control prices of war materials. It maintains incentive while keeping costs and prices down. Example: three manufacturers of machine guns, the most efficient producer with a price of \$250, nearest competitor \$300, third firm \$400. On renegotiation low priced producer allowed 20 per cent profit margin, or approximately

\$50 a gun, second producer 13½ per cent profit or \$40 a gun, so his margin of profit and dollar profit substantially less. The \$400 producer to be treated in proportion.

Army intends to allow generous profits to those who really reduce costs by skillful management and by ingenuity and improved methods. The contractor whose pricing profits are not unnecessarily loaded for contingencies can expect a better deal than one whose profits obviously require reduction and refund, but contract provisions have been authorized to protect contractors against certain of the unforeseeable risks. Price not the only factor in placing contracts; facilities of manufacturer count. Critical labor areas get no new contracts that can be switched elsewhere.

Two major aircraft plants renegotiated contracts; none exempt, unable to set fixed price because of changes in design. More contracts terminated in last three months than at end of last war; sub-contractors are protected as well as the primes in termination; Col. Browning believes an immediate cash payment should be made to aid the firm in its post-war activity.

Manpower

William K. Hopkins, regional director, War Manpower Commission:

Scraping bottom of the barrel for labor on the Pacific Coast. Must be big swing from trade and service industries. We have not as yet felt the real impact of war that is coming, and ahead lies noticeable dislocation of social and business life. Will have to take 10 women where you would prefer five qualified men. WMC hopes all this can be accomplished voluntarily. Can't continue to import thousands of workers, so work week must be lengthened to 48 hours and women and part-time men workers utilized. In two weeks 18,000 women were recruited in Portland.

Wage Stabilization

Thomas F. Neblett, chairman, Tenth Regional War Labor Board:

Applications for wage and salary adjustments involving only interplant inequalities and which cannot be decided on basis of Little Steel formula or substandards of living will be denied. Cost of living increased 18 per cent since Little Steel formula set, but average weekly earnings up 30 per cent, and average hourly straight time increased 5.6 per cent more than cost of living.

Action taken by regional board in more than 2,000 cases in two months since decentralization plan set up by national WLB. Over 20 per cent denied, 15 per cent modi-

fied, 65 per cent approved. Although firms having eight or less employees exempt, warned against departing from Little Steel formula. If wage law not heeded, increases can't be deducted from income tax. Both employer and union representatives on the board have gotten their own groups into line in many cases, e.g., employers in San Diego laundry case, CIO members with lettuce pickers at Phoenix, AFL members with California Street cable employees in San Francisco.

National Legislative Review

R. S. Smethurst, NAM general counsel:

Industry is in good repute at Washington, favored by substantial majority in both houses of Congress. Bureaucracy is in for investigation by Congress, which is also becoming impatient with some labor activities, such as slow-downs, featherbedding, organizing drives, and inability of three labor groups to get together. Congress will not stand for any impeding of war effort and will strike hard if necessary.

Industrial Trends

Harvey Saul, director NAM industrial relations department:

WLB has immense influence over future of industry, and is impressed with unions' sacrifice of right to strike, so has given them union security. Less than 20 per cent of labor affiliated with unions, yet an active minority shapes labor relations. All strikes since Pearl Harbor have been among union men.

(See pages 22-23 for pictures of San Francisco meeting banquet. Pictures of northwest meetings in next issue.)

Superhard Rivet Replaces Bolts

A super-hard rivet named the "Hi-shear," strong enough to replace bolts on aircraft or other structures, has been developed by North American Aviation, Inc. It has considerably lightened the weight of the "laminar flow" wing of the P-51 Mustang fighter, effecting a 60 per cent weight reduction in relation to the equivalent bolts and rivets previously used.

The secret of the "Hi-shear" rivet is in the method of installation. With a shear strength of 75,000 pounds per square inch, compared with a normal rivet's shear strength of 25,000 pounds per square inch, it is too hard to be driven in the usual manner.

Instead, it is "riveted" into place by a special tool that presses a tiny aluminum alloy collar into the notched end of the stud, leaving a modified conical head. Excess length of the collar is sheared off automatically by the tool during the operation by pressure against the sharp edge on the tip end of the stud.

The inventor, George Wing, a North American Aviation engineer, also invented a special tool employed in the riveting operation.

Western Firm Creates CMP Record System

THE CMP Consolidated Allotment Accounting Manual of the War Production Board dated February 26, 1943 covers the accounting procedure and required records very nicely. The form shown in the center of the book should be modified to show customer's order number and also your order number in placing orders under the allotment. Rather than a card record, a form similar to the card record should be laid out on the inside of the folder.

As allotments are received, these are posted to the proper folder. As purchase orders are issued against the allotment, the recording should be made on the form and an extra copy of the purchase order filed in the folder to which it pertains. This will give those who wish an easy method of checking your records.

The folders should be set up first by alphabetical sequence, then by numerical sequence. Thus when a purchase order covering more than one allotment is placed, it should be noted on the applicable folder records and filed in the one closest to the front of the file. The posting of purchase order numbers will provide a quick cross reference.

There is no accounting required on your purchase of Class "B" products incorporated into products manufactured by you. It is well, however, that you be in a position to show, in accordance with the Act, that these were not ordered in excess of requirements or sooner than required to manufacture the product on your approved schedule.

A perpetual inventory record would do this in proper manner. Thus, it would be well to note the major purchase of this type of product on the opposite inside of the folder, showing the supplier, date and purchase order number and quantity. The purchase orders covering these Class "B" Products should not be filed in this same folder as it is quite probable that the num-

A SIMPLE ACCOUNTING PROCEDURE

The accompanying explanation of a record keeping system for businesses operating under the Controlled Materials Plan was written by an executive of a large Western firm for *Western Industry*. The information to be supplied from records is covered in CMP Reg. No. 1, Y-1-2-3.

This procedure divides itself into several parts, as follows:

- (1) Accounting for allotment numbers extended you.
- (2) Accounting for allotments used.
- (3) Accounting for "B" Products purchased by you and incorporated into products manufactured by you.
- (4) Extension of allotment numbers where in you act as distributor rather than as manufacturer.

ber of these orders will exceed the orders for controlled material.

It would be well to keep a separate numerical file for orders placed other than on controlled material. Thus by spot check it can be easily ascertained by reference to the allotment number, as shown on all orders, both Controlled Material and "B" Products, whether an excess has been ordered.

Customers Extensions to You

The customer's extension to you should be recorded in a cross index file, as its only value in a Class "B" Product which you manufacture is for the classification of sales, and for him to secure the benefit of an allotment plus a priority over a priority only.

If you are acting as a manufacturing representative on a Class "B" Product, this allotment number and priority, of course, should be extended to your supplier of these Class "B" Products. It is not mandatory that a customer give you an allotment number for a Class "B" Product, but it is decidedly to his advantage to do so and it is decidedly to your

advantage to obtain it in order that your sales can be properly classified.

The classification of sales referred to above is required in making application for materials to manufacture Class "B" Products and a form should be set up for accumulating these figures. Probably the best form to use on this would be one similar to the Section "C" as shown on the CMPAB application for the third quarter requirements of 1943. A sample used by one firm is illustrated herewith.

One form should be set up for each class of products manufactured, and each form will cover only shipments for certain quarters—actually for prior quarters, estimated for future—the only addition required would be a provision for the insertion of the sales order number. This will enable a ready means of check back. The actual figures will show your rate of production, which must be in line with authorized production schedules.

If a customer's allocation to you covers an order with numerous items and requiring numerous extensions, provision should be made for recording at least the order numbers. These extensions can be recorded in most any manner, showing factory, date, order number, etc., on a form you attach to the rear of customer's allocation. It is quite conceivable as a distributor that you be asked to show the use made of various allotment numbers; at least you should be in a position to show your customer his allotment number was extended in the proper manner.

In the case of a Class "A" Product the customer not only endorses his purchase order but allocates you the authority to purchase material for the manufacture thereof. You in turn must allocate material to your sub-contractor who supply Class "A" Products. It is therefore necessary that a folder be set up for each of these Class "A" Orders and copies of the purchase orders expending the allocation file therein. The purchase order (copy) covering Class "B" Products incorporated into "A" would be filed after proper notation in the General Numerical File for Type "B" purchase orders. Each of these Class "A" allotments must be considered and treated as a complete schedule.

ALLOTMENT IDENTIFICATION		CONTROLLED MATERIAL		UNIT OF MEASURE		PERIOD	
A-5		Carbon Steel		Tons		2nd quarter 1943	
Date	Reference	Purchase Orders	Allotments Received	Reallotted to Other Consumers	Orders Placed	Allotment Balance	
Apr. 10	U. S. Army	1405	100 Tons				
May 18	Southern Steel	1804			10	90	
May 20	Gilco Mfg.			5		85	
	Special note						

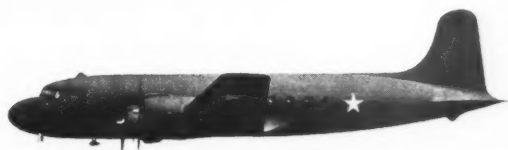
• Run this form by ditto on a folder—use this folder as your record and also to file copies of supporting purchase orders. A folder is to be made up for each agency and program number as required



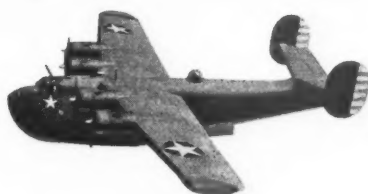
WAY WAY UP THERE WITH THE FLYING FORTRESSES YOU'LL FIND PACIFIC GEARS



HIGH IN THE SKY WITH CONSTELLATION OR LIGHTNING WE'RE THERE TOO



DIVING WITH DOUGLAS OR CARRYING TROOPS OVER AFRICA—WE'RE HELPING



LIBERATORS LAMBASTING LORIENT, CORONADOS SCOUTING KISKA DEPEND ON US



HEDGEHOPPING VULTEE VANGUARD FIGHTERS AND VALIANT TRAINERS KNOW WE'RE WITH 'EM

WE'RE KNOWN AS THE GEARMAKERS OF THE AIRCRAFT INDUSTRY
—producers of high strength, high precision gears and geared actuator units
of all types for America's General Industry of Tomorrow—and Today!

PACIFIC



WORKS

DIVISION

WESTERN GEAR WORKS

2053 EAST 38TH STREET,

LOS ANGELES, CALIF.

Associated Companies:

WESTERN GEAR WORKS—Lynwood, Calif. • PACIFIC GEAR & TOOL WORKS—San Francisco • WESTERN GEAR WORKS—Seattle, Wash.

Kaiser Ship Failure Causes Analyzed

THE break in the oil tanker, "Schenectady," at the Swan Island yard at Portland, Oregon last December (Editor's note: The Schenectady broke in two and sank), while standing at the dock and after a trial run, has caused much discussion.

This failure is important because there is very little doubt that it is possible for the same failure to occur in many other ships. We, therefore, must evaluate what happened accurately.

Let us first consider the causes listed above. We can be sure that the so-called locked-up stresses of welding did not cause the break. These stresses obviously decrease continuously as soon as weld is cold. Such stresses would, of necessity, cause failure immediately or not at all.

If improper loading would cause failure it certainly would not cause it at the dock, it would have caused it when the ship was in a seaway during its trial trip.

We probably can also rule out the other suggestions which have been made which are even more fatuous.

In arriving at the actual cause, the following fundamental fact should be considered: It is possible to have unequal expansion of the shell of the ship compared to its deck. Since the temperature of water is fairly constant compared to the air when the ship is in cold air, the shell is expanded compared to the deck, thus putting a tensile stress on the deck which may be very great. For instance, a difference of 15 degrees Fahrenheit between the shell and the deck will make a relative change of $\frac{3}{4}$ inch in the length of the deck and the shell of the ship. Normally the deck would stretch by this amount without further damage.

There are conditions which would not allow such a happy outcome. If there is an incipient tear started at the longitudinal center of the deck, then all the stretch will take place at this point. If there is an abrupt change of section of the deck, the same tendency will result. If the stretch forced by this unequal expansion takes place in this one point, rupture must result. This is obviously what happened in all the cases of all known failures.

Obviously, all ships so made are threatened with the same failure if all the same unhappy circumstances should take place. However, this can only occur when the temperature of the deck is relatively cooler than the temperature of the shell. Therefore, if the ship has gone through one

By JAMES F. LINCOLN
President,
Lincoln Electric Company

winter without failure, the chances of its failing later are extremely remote.

There are three suggestions as to how the above possibility can be entirely eliminated. First, obviously, is to make the deck stronger relatively than the shell so the deck will bend the shell instead of the shell stretching the deck.

The second suggestion would be to put a wrinkle in the deck so that the pull mentioned will straighten out this wrinkle before it puts any great tensile stress on the deck.

Third, and this is more reasonable than the other two, is to put the deck under a sufficient compression at time of construction so that under any difference of temperature to which the ship will be exposed in service, the deck will not be put under a tensile stress which will approach its minimum strength at any point. This can easily be done at the time of welding the deck together in the center section by wedging it apart at the time.

Too Much Hurry, Poor Steel

TOO GREAT an effort to turn out ships fast, to meet the emergency, resulting in poor welding, augmented by the use of sub-standard steel, was the main cause of the tanker Schenectady breaking in two January 16 at the Swan Island yard of the Kaiser Corporation in Portland, according to the investigating committee of the American Bureau of Shipping. Professor S. H. Graf of Oregon State College acted as consultant in the steel investigation.

The steel came from the Carnegie-Illinois Steel Company, but not from the Irvin mill where the defective steel reported in the Senate's investigation came from. The Kaiser steel was from the Homestead factory.

"A combination of unfavorable circumstances" was the committee's summary, in which they named the principal cause as an accumulation of an abnormal amount of internal stress locked into the structure by the processes used in construction, together with an acute concentration of stress caused by defective welding at the starboard gunwale in way of the abrupt ending of the bridge fashion plate, augmented by the hogging stress due to the

Idea Display For Plastics Users

An "idea room," where prospective users of plastics may see what others have done in utilizing material of this nature, has been established by Wilson & Geo. Meyer & Co., representatives of the Tennessee Eastman Corporation, at their headquarters at 333 Montgomery Street, San Francisco.

Samples of various types of warfar products, manufactured from Tenite, an Eastman plastic, are on display, as well as airplane parts, builders' hardware, tubing, stripping, and peacetime items of utility and novelty nature. This enables visitors to visualize the possibilities of using plastics in warfare jobs and improving their present line by taking advantage of the toughness, light weight and speediness of handling that Tenite offers. An extensive file of pictures is on hand to supplement the display.



• View of plastics display room

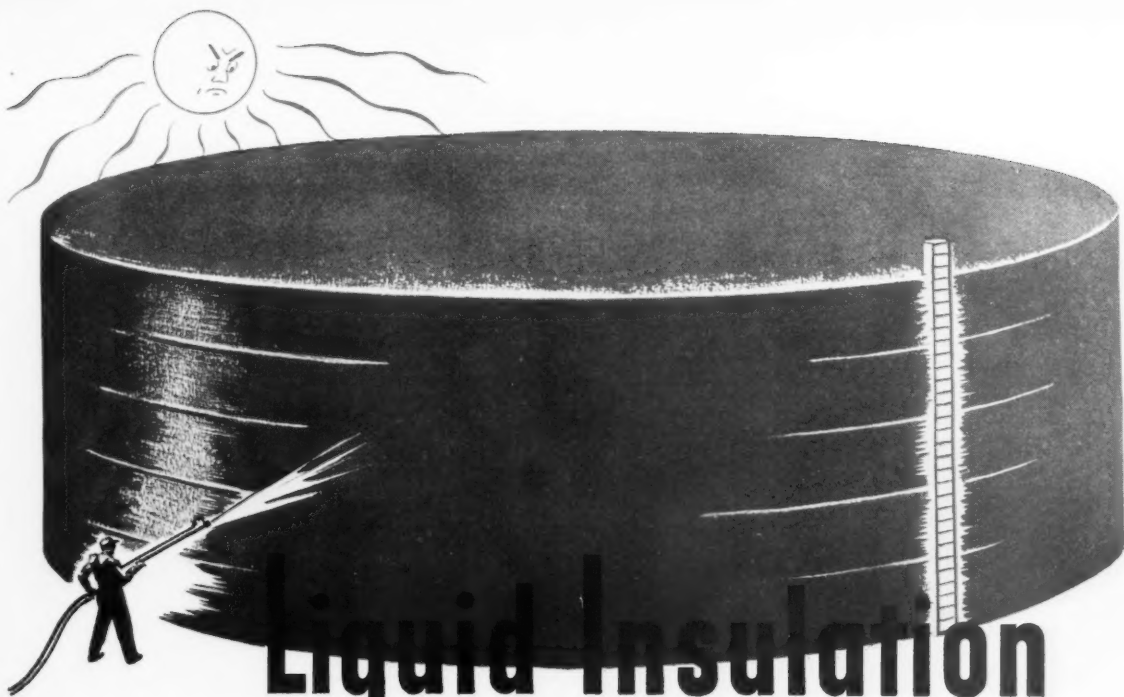
ballasted condition; this accumulation and concentration of stress caused a tensile failure at the starboard sheer strake which was formed of steel of sub-standard quality, all of which was aggravated to some degree by the drop in atmospheric temperature.

Among the contributing factors listed were the following:

Evidence in the sister vessels under construction of poor fitting of large subassemblies which necessitated considerable forcing into position by the excessive use of jacks, turnbuckles, etc. In other cases open joints required the use of an excessive amount of welding to finish the joint, resulting in excessive shrinkage.

Serious accumulation of shrinkage stresses occurred in the automatic machine welding of the deck assembly joints, especially in the longitudinal joint at the gunwale attaching the sheer strake to the stringer plate. This particular welded joint was also found defective in way of the location where the failure started as evidenced not only by a longitudinal crack but also by what appeared to be minute transverse cracks in the weld.

The defective welding of the Schenectady and sister ships has been removed and the joints properly rewelded, and the committee felt that closer control of welding processes will prevent a recurrence of such major failures.



Liquid Insulation

The newest development in PAINT

No longer just an idea, now Caladium is here and ready for action . . . action that means perfection in liquid insulation!

Wherever reduced interior temperature and durable surface protection are factors, Caladium—the amazing new paint achievement — now delivers the newest and highest standards

in liquid insulation efficiencies! On storage tanks, pipe lines, roofs (EVEN ON ASPHALT), Caladium produces a protective coating for ALL surfaces that cannot be duplicated.

Scientifically manufactured with non-critical materials, Caladium exceeds by laboratory test the sun-reflectivity value of war scarce aluminum paint and it exceeds it by a large degree, often as much as 50%. Further than that, this heat-deflective value in Caladium actually increases with age.

CALADIUM is a new and revolutionary oil-base type paint developed for use over wood, metal, asphalt, or other bituminous surfaces. CALADIUM may be used over any surface where strategic aluminum paints would ordinarily be used or specified to prevent "bleeding" or to deflect the heat rays of the sun. CALADIUM produces a tough, flexible coating of unsurpassed durability which "blocks out" penetrating factors — coming and going.

Learn more about CALADIUM and how it can help solve your painting problems by having a Premier representative furnish you with complete information. Write or phone:

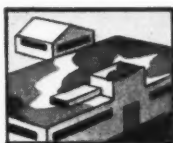
PREMIER OIL & LEAD WORKS
3950 MEDFORD STREET — LOS ANGELES — PHONE — AN. 15141



Amazing heat deflecting properties reduce evaporation loss to minimum.



Keeps buildings cooler — wide selection of decorative colors.



For camouflage—low visibility colors, resists infra-red photography detection.



Covers asphalt and other bituminous coatings without "bleed-thru."



Weather resistant coating for all kinds of rolling stock — dull or glossy finish.



Does the hard jobs better — dries rapidly, brush or spray.



Caladium

PERFECTION IN PROTECTION

Squeaks, Scale, Journey Slow, Delays Date In Tokyo . . .

By R. L. FISKE*

AS INDUSTRY begins the 1943 battle of production, it also enters upon its second year of equipment shortages. Production of new equipment of all kinds will continue to be preempted by the armed forces and new ordnance and munitions plants. Operators must make processing, power and construction equipment last for the duration. Today it is irreplaceable.

Keeping equipment on the job is not only essential to war production—it is vital to business existence. Recognizing the seriousness of the situation, industry is meeting the challenge by instituting carefully planned maintenance programs, for adequate and thorough maintenance is the only answer to equipment shortages.

Most plant engineers and operators regard maintenance as being of two types. The first involves taking the necessary steps to assure intelligent handling of the equipment. Abusing or overloading equipment is the surest way to shorten its life and the possibility of this occurring is today greater than usual, for many plants have lost skilled engineers and mechanics to the armed forces. Cooperating in this phase of maintenance are the equipment manufacturers themselves. They have spared no expense to show their customers how to get the most from their equipment.

The second type of maintenance is concerned with repair and overhaul. No matter how efficiently a unit is operated, periodic overhaul is essential to long life. This is particularly true with water circulating and water cooled equipment such as gasoline and Diesel engines, compressors, evaporators, condensers and other heat exchange equipment, dough mixers, blanchers, etc.

Efficiency of operation in equipment of this type depends upon the ability of the cooling water to keep the unit operating within its prescribed temperature range. If oil films or water scale and rust deposits are allowed to accumulate in the cooling system, heat transfer is impeded.

How effective an insulator hard water scale can be is illustrated by the case of a bakery employing water cooled dough mixers. These units had accumulated scale deposits which interfered with heat transfer to such an extent that several hundred pounds of ice had to be added to the cooling

water every day to keep the dough at the proper temperature.

In surface condensers, the insulating effect of scale deposits is reflected in substantial vacuum losses. Research has shown that for each inch of vacuum lost between 29 and 25 inches, the steam consumption increases 5 per cent to 7 per cent. Periodic descaling therefore results in substantial fuel savings, the wartime importance of which need not be emphasized here.

Insulating deposits in Diesel engines impede heat flow from the combustion gas and the hot internal parts of the engine to the cooling water. An operator may unwittingly subject his engine to severe abuse from this condition, simply because he does not know it exists. The temperature of the cooling water will stay low because the heat from the combustion-chamber envelope is not transmitted to the cooling water. The effect of engine operation at excessive temperatures is of course well known.

Scale raises havoc with every type of water-circulated equipment. It clogs sprays of air conditioning and humidifying units, it causes bottles to jam in pockets of bottle-washing machines, it throws sensitive dynamometers (used to test hp output of airplane engines) out of kilter, it blocks blast furnace and electrical transformer cooling coils, and it encumbers water heaters and hospital sterilizers. Yet, modern maintenance procedures make the thwarting of scale difficulties comparatively easy.

Two methods are available for scale removal—mechanical and chemical. The mechanical method is confined chiefly to tubular equipment such as surface condensers and consists of drilling or rodding-out the tubes individually. This is a time consuming, tedious, manual operation and has a marked detrimental effect on tube life due to the unavoidable cutting away of sound metal. Even under ideal conditions, tube cleaning by mechanical action amounts to only a partially complete job, and such methods are today completely out-moded.



• Four vertical shell-and-tube condensers for refrigerating equipment used in the Pacific Northwest as they were set up for simultaneous descaling. No elaborate equipment necessary

The chemical method is one in which an acidic solution is introduced into the system following the path of the water, thus reaching all surfaces bearing scale deposits. With this method the unit does not have to be disassembled and the work can be done by making a few simple connections.

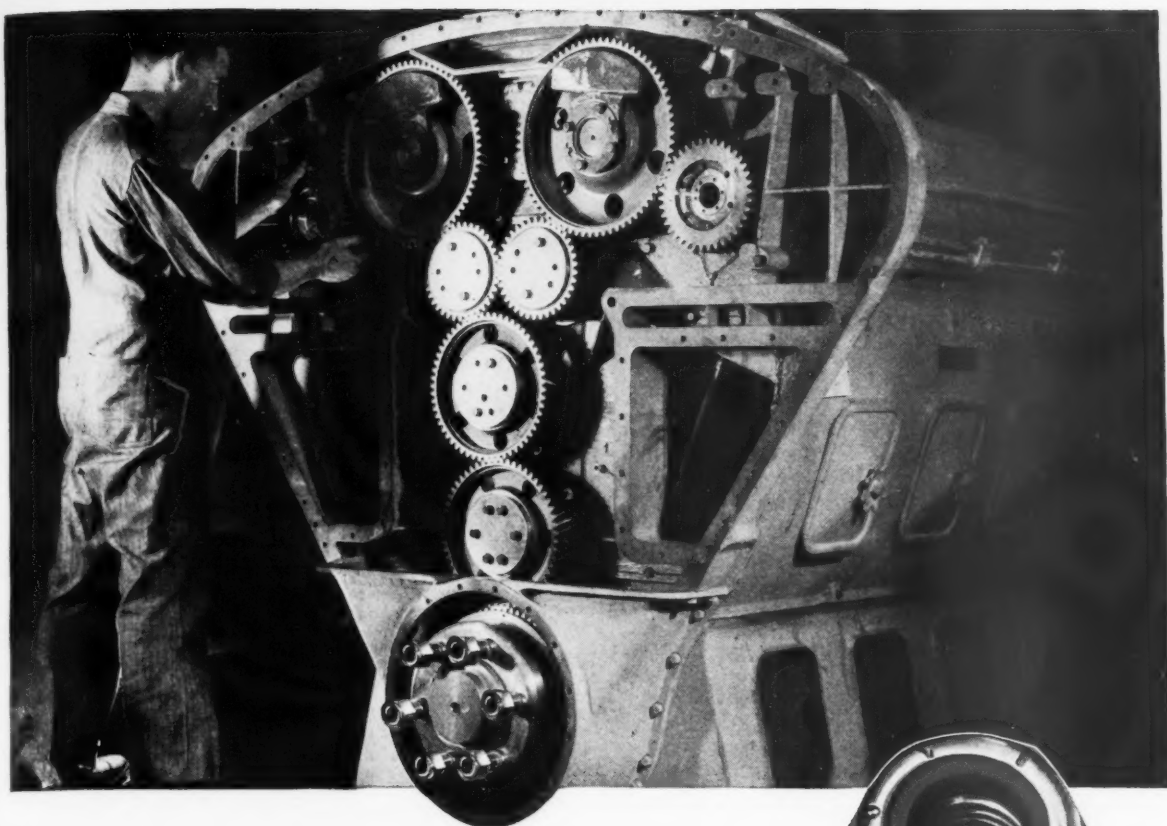
In the past, raw commercial acids have been employed for this work, the usual procedure being to add an inhibitor of one type or another. This required extra equipment and extreme care in mixing, for a variation of more than 3 per cent in either direction from the stipulated formula meant that the descaling solution would not work effectively because too much inhibitor had been added or that the equipment surfaces would be attacked because of insufficient inhibitor content. Also there was always the risk of injury to personnel, unaccustomed to handling raw acid.

In response to a demand for a prepared solution definitely designed for scale removal and having consistent and predetermined protective qualities, detergent manufacturers have produced compounds that have gained wide acceptance. If properly prepared, they remove scale and rust only, with maximum safety to the sound underlying base metal.

Most equipment is descaled by filling the system with such a solution and allowing it to soak for a required period, depending on the condition of the unit. On surface condensers and similar equipment it is sometimes desirable to circulate the solution through the system, and in this case a pump of adequate size should be provided.

In peacetime, adequate maintenance of equipment has paid big dividends in operational costs and equipment life. Under present conditions, proper maintenance is vital to victory and no effort should be spared to see that every unit is given proper care and attention. Today equipment is priceless—maintenance is cheap.

*Oakite Products, Inc.



SIX NUTS THAT BRIDLE A THOUSAND HORSEPOWER

THIS is the business end of a powerful Diesel engine.

Well over a thousand horsepower spins through that coupling — through those six studs.

To connect that coupling, old-style lock fastenings wouldn't do. They couldn't both lock and be tightened to spread the load evenly. So studs failed.

The solution shows in the photo — Elastic Stop Nuts.

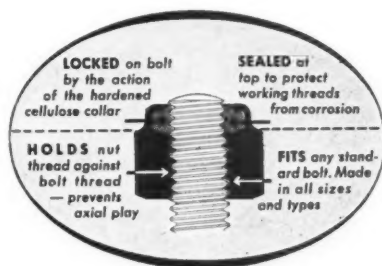
With these fastenings, uniform pressure was obtained as well as complete security against nuts working loose.

In the peacetime production to come, equally puzzling prob-

lems will plague manufacturers.

And we are prepared to help. Our engineers who today are solving war production problems will be ready to share their wide experience with you.

Whenever you have a fastening job let us know. Our men will work with you on it and recommend the correct Elastic Stop Nut to produce a better product or to facilitate its manufacture.



ELASTIC STOP NUTS

Lock fast to make things last

ELASTIC STOP NUT CORPORATION OF AMERICA, UNION, NEW JERSEY



(Right) Beginning with lower left corner, clockwise, are: Paul Downing, P.G. & E. Co.; J. S. Curran, Anglo-Cal. Bank; Ernest Ingold, pres. S. F. Ch. of Commerce; W. H. Thomson, Anglo; Jos. A. Moore, Sr. of Moore Drydock, Joshua Hendy, etc. etc.; Col. Clarence M. Young, Pan-Am. Airways; R. D. Brigham, Anglo; Robert E. Christy, United Engineering; Willard Marks, Roebling; C. E. Baen, Anglo. At table in rear, from left: Geo. Wagner; Louis Lundborg, S. F. Ch. of Commerce; Joe Scheifer, C. G. Crawford, R. S. Quick, I. M. White, all of Pelton Water Wheel Co. John D. Turner and Hubert Briggs of Stockton and Frank Abbott, Sunset Press, in distance at the right.



First table, from left: C. Pickens, Cohn, Jr., Heineman, L. W. Stettner, W. J. Rider, all of

NAM

SAN FRANCISCO

(Left) One segment of the speakers' table. Beginning Alameda Naval Air Base; Weller Nollig his napkin chairman United Employers, Ltd.; Edgar Soule, pres. Hilp's Drug Store, Reno, pres. Calif. Employers; & Electric; O. H. Fischer, pres. Union Engine Co. William K. Hopkins, Regional Director Manpower

(Right) More of the speakers' table. Ray Saul, Dir. NAM; Walter S. Johnson, pres. Amer. Box Corp.; R. Jos. A. Moore, Jr., pres. Moore Drydock Company; Cal (once a famous sprinter); F. J. Koster, California USN, Inspector of Naval Materials.

(Below) Remainder of the speakers' table. Rear Adm. Guard; A. C. Mattei, pres. Honolulu Co.; Edgar B. lating Machine Co.; E. L. Oliver, pres. Marylan pres. The Paraffine Companies, Inc.; Brettville Co.; Stanley Pedder, pres. Emeryville Medical Co.; Frank Mfg. Co.; Kim Hong, Moore & Co.; F. Products, Inc. and pres. NAM; J. D. Lebach, pres. regional v.p., NAM; A. W. Eames, pres. California Pac Pierce; Col. Frank K. Ross, USA; Charles Ken



(Above) Table in foreground starting at lower left corner, clockwise: D. J. Galen, Frank A. Drumb, G. J. Ticoulat, Al Owens, Crown Zellerbach Corp.; J. E. Crosby, Western Waxed Paper Co.; W. G. Fisher, Albers Milling Co.; R. A. McDonald, A. L. Bennett, F. O. Olmsted, R. O. Young, Crown Zellerbach.

(Right) Table in foreground, clockwise: Wilmot Rogers (facing the camera), Irving Granicher, H. G. Richard, Roy L. Pratt, A. M. Lester, G. R. Ward, all California Packing. Center group, from lower right corner, clockwise: E. G. Lawson, J. E. Toussaint, A. C. Moorhead, W. K. Minor, Standard Oil Co.; Carroll Stephens, U. S. Lime Products Co.; Mrs. Stephens; Harry Bell, El Dorado Lime-stone Co.; Mrs. Bell; Stuart





Pickens, Cohn, Jr., Karl Heineman, Richard
er, W. Linder, all of Victor Equipment Co.



(Left) Beginning with lower left corner, clockwise, are: R. T. Kimberlin, Crown-Zellerbach (with glasses and curly hair); T. H. Anderson, Ed Shelton, T. J. Finnerty, V. E. Hecht, T. A. Leddy, E. A. Breyman, all of Zellerbach Paper Co., B. J. Carey and L. G. Wilson, Rayonnier, Ltd; R. G. Shephard, Crown-Zellerbach Corp. Next table behind at right (from the left): Ray Lawrence (back of his head showing), W. R. Ames Co.; Wesley Hicks, Wesix Heater Co.; R. A. Folsom, W. R. Ames Co.; E. P. Kayser, Arthur J. Kercher, Everett Hicks, Thos. J. Mellon, all of Wesix. Sorry we can't identify the people at the remaining tables.

NAM

NOCO MEETING

speakers. Beginning at left end: Lemoyne Cox, (with Nalgene his napkin), gen. mgr. Pacic Guano Co., Ltd.; Edgar Soule, pres. Soule Steel Co.; Lester J. Hilp, Calif. As. Employers; James B. Black, pres. Pac. Gas Co.; Union Engine Co. and pres. Calif. Mfrs. Assn.; Director Manpower Commission.

ers' table: Ray Saul, Director of Industrial Relations, Wes. Am. Co.; R. S. Smethurst, counsel, NAM; (from Dr. company); Capt. Chas. W. Paddock, USMC; J. Kuster, California Barrel Co.; Capt. A. B. Court, (from Dr. company).

speakers: Rear Admiral E. D. Jones, U. S. Coast Guard; Edgar B. Jessup, pres. Marchant Calcu- (from Dr. company); J. D. & A. B. Spreckels, (from Dr. company); Max A. Cowan, pres. Cowan, Moore & Co.; F. C. Crawford, pres. Thompson & Co.; J. D. Zellerbach, pres. Crown-Zellerbach Corp. and James, pres. California Packing Corp.; Rev. Jason Noble USA; Mr. Charles Kendrick, pres. Schlage Lock Co.



(Above) group at left, clockwise: J. A. Baldi, Yellow Cab Co.; A. P. Johnson, Standard Oil; Harry Hansen, Motor Parts Sales Co.; Fred Schlanker and son Bob Schlanker, Motor Parts Co. Table at right, from lower right corner, clockwise: Mrs. W. B. Weisenburger, (NAM); A. J. Lundberg, Key System; Mrs. D. D. Crawford; T. E. Aher, Coffin-Redington Co.; Mrs. Jos. Thompson; Mrs. A. C. Mattei.



(Left) Another section of the Calpack table (includes some who also appear on facing page). From lower right corner, clockwise: A. M. Lester, G. R. Ward, L. E. Wood, Ralph Brown, Arthur Ford, R. E. Sanborn, Wilmet Rogers.

Tube Mill For Pacific Coast

THE Pacific Coast's long-felt need of a tube mill is being answered, as a result of the urgent need to save time and costs in war jobs. A \$1,500,000 tube mill in the Los Angeles area financed by the Defense Plant Corporation, is being equipped with second-hand machinery shipped in from various parts of the country and will be housed in buildings formerly located in Galveston, Texas, but knocked down and reassembled.

Pacific Tube Company, owned largely by executives of the Superior Tube Company of Philadelphia, will provide the working capital and operate the plant, with an option to buy after the war. Clarence A. Warden Sr., of Philadelphia is president and Clarence A. Warden, Jr., vice-president and treasurer, while the executive vice-president is F. G. Harmon, until recently assistant general sales manager of Columbia Steel Company. Paul E. Kelly of Superior Tube will be secretary and assistant treasurer, and R. H. Gabel, production manager of the same company, vice-president in charge of engineering. Clarence H. Wallis, plant superintendent, has been superintendent of the cold drawing department of National Tube.

Plant capacity will be 2,500,000 feet of tubing a month from steel and ferrous alloys. Sizes of seamless cold drawn tubes run from 1/2-inch O.D. to 4 inches, giving the Los Angeles mill the second greatest range of such products in the United States. Electric welded tubing in all grades and forms will range from 1/2-inch O.D. to two inches.

The factory will be a so-called service type plant, with many short parallel production lines, in sharp contrast to most eastern tubing mills, which are of the production type, or one long single production line of great inflexibility. The eastern type is suitable for peace-time

uses, but causes long delay in military production. Pacific Coast airplane manufacturers, for example, must wait from 150 to 210 days between the time an order is placed and delivery completed. Pacific Tubing will be able to deliver within 14 to 35 days, with emergency deliveries possible in a day or two on special occasions.

Magnesium From Dolomite Feasible

Feasibility of utilizing the nearby 400,000,000 ton Sloan dolomite deposit for making magnesium at the new Basic Magnesium, Inc. plant near Las Vegas, Nevada, thus eliminating the 1,000-mile haul of magnesite ore from Luning, has been announced by the U. S. Bureau of Mines. The deposit is owned by the United States Lime Products Corporation, and its use by BMI would greatly reduce production costs.

Tests were conducted at the Bureau's experiment station at Boulder City, and Secretary Harold L. Ickes states that the Bureau has sufficient data to operate a small commercial-scale plant to process the dolomite. The Basic Magnesium management have been hoping that this plant would be set up at Basic's huge project where the results would be of sufficient practical value commercially, but the announcement from Washington does not indicate whether this will be done.

"The process for extracting magnesium oxide from dolomite depends," *Western Industry* is informed by R. S. Dean, assistant director of the Bureau, "on the well known reaction whereby treatment of calcium hydroxide with magnesium chloride solution results in the precipitation of magnesium hydroxide and the dissolution of calcium as the chloride, and on what is substantially a reversal of this reaction produced by the introduction of carbon dioxide gas to precipitate calcium carbonate and take magnesium into solution.

"The Bureau's pilot plant work proved that high-grade magnesia, suitable for reduction to the metal by electrolysis in a

An eight-year old girl not only christened a minesweeper at the Bellingham Railway and Shipbuilding Company at Bellingham, Wash., on April 5, but also cut a ribbon to release the trigger that started the vessel down the ways. She was Sara Elizabeth Schnabel, daughter of a marine fitter foreman. When the ribbon was cut, a sort of "Rube Goldberg" contraption of weights and pulleys devised by E. H. Thorson, general superintendent, was set in motion. The weights dropped, driving out the wedges that locked the launching cradles, and the vessel began to move down the skids.

fused chloride electrolyte, and high-grade calcium carbonate can be produced economically from Sloan dolomite by the process."

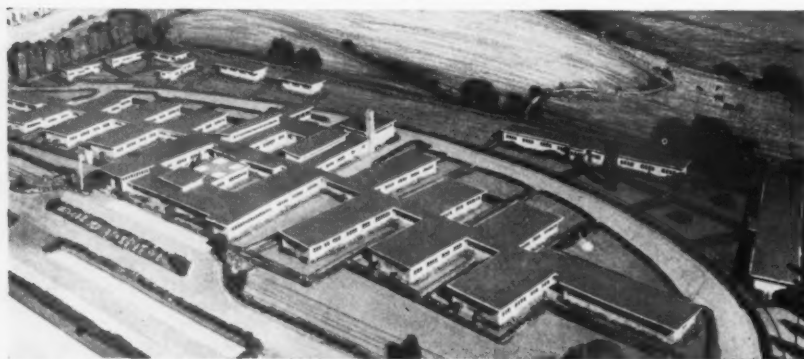
Northwest Steel Plant Proposed

Construction of a steel plant in the Pacific Northwest that would produce annually 170,000 tons of pig iron, 200,000 tons of steel ingots, 75,000 tons of structural steel and plates, and 60,000 tons of merchant bar steel and other by-products, is up before the War Production Board for consideration.

Application for release of 15,000 tons of structural steel and other machinery was requested last month by George E. Murphy, president of the Portland Spar Company, and H. A. Brassert, steel plant designer. Mr. Murphy is president of the new enterprise, the Pacific American Steel and Iron Corp. and the proposed plant will be located in Everett, Wash., and would use ore from the Northwest.

Crackdowns Again

• WPB crack-downs for violations of priorities now have extended to the Kaiser shipyards. The Richmond company has been charged with 31 offenses, ranging from purchase of 928,000 feet of lumber to \$2,643,854 worth of electric motors over a six months period. The second largest judgment in the country for violation of OPA ceiling prices was awarded in San Francisco against J. H. Baxter and Company, for \$208,072. OPA has started suit against California Scrap Iron Corporation, Oakland, for selling iron and steel scrap above the ceiling. Berg Metal Corporation, Los Angeles, accused by the OPA of shipping scrap from Arizona and New Mexico by truck instead of rail, replied with a counter-complaint that the maze of OPA regulations prevents moving scrap gathered from remote spots beyond the rail lines. OPA in Portland has sued various scrap dealers on charges of upgrading, overcharging and falsification of records to enjoin them from further violations, and the dealers counter that OPA has downgraded all the profit.



• Vallejo, California, which formerly hardly numbered 20,000 people, but now has a population of 100,000 or more, will have this 262-bed community hospital completed within six months. Built by Barrett and Hilp, San Francisco, a \$1,100,000 project

These men cut waste and delay for you...



OUR skilled engineers, designers and metallurgists have always been an essential part of our organization. The number of customer problems they iron out over a period of a year runs into the thousands.

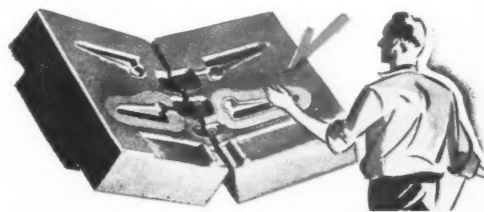


This service has become even more significant during wartime in reducing waste of materials and manhours; in making more effective the end products in which many General Metals castings and forgings form basic parts.



General Metals engineers are called upon to recommend not only the proper grades of iron and steel, but also in some cases the specific design of patterns or dies for the most efficient and economical production of parts.

There is no guesswork when these technicians of the forging and casting industry answer your call.



GENERAL METALS CORPORATION
LOS ANGELES • OAKLAND • HOUSTON



GENERAL METALS *Castings and Forgings*

Draft Board Bulletin Is Key to the Future

Study Its Provisions to Ascertain Whether Your Business and Your Men are Essential

AFTER at least four months of study, survey, investigation, hearings, and interminable conferences, the War Manpower Commission and Selective Service System have brought out the revision of the Bulletins which in theory enable the local draft boards to determine the essentiality of an industry or business, and the men they employ.



These all-important leaflets, about 8x10 inches in size, arranged loose-leaf fashion to insert in files from which other memoranda may be discarded, list 35 groups of productive and service activities, and the occupations of those employed by the groups, whose work is essential to the war. There are over 3,000 items listed, indexed, and divided into various classifications covering the activities defined as essential.

The yardstick used to determine the essentiality of the activities listed was based (1) on the extent to which the item is directly used for combat; (2) the degree of scarcity of supply; (3) the relation of the product, service, or facility to the operations of essential activities; (4) the extent to which the product, service, or facility is needed in maintaining minimum civilian requirements under wartime conditions.

These Bulletins have now been received by more than 30,000 draft boards, War Manpower Boards, U. S. Employment Service Offices, State Selective Service offices, and the local, area, and regional officials of these various agencies. Until the next revision is issued, probably four to six months hence, these Bulletins determine the fate of your business and its title to manpower.

Activities listed in the Bulletins embrace the production of:

Agricultural services aircraft and parts; ammunition; apparel; chemicals and allied products and essential derivatives; coal mining; commercial fishing; communications equipment; communication services, which include radio, telegraph, phone, newspapers, periodicals, etc.; construction; educational services, i.e., production of technical and vocational training films, U. S. Maritime Service Training program, Civil Aeronautics Administration, Civilian Pilots Training program, War Department Contract Flyers Schools, instruction and administration of general and vocational institutions, student

deferment; finished lumber products; finishing metal products; food processing; forestry, logging and lumbering; government services, federal, state and local; health and welfare services; heating, power, and water supply and illuminating services; industrial and agricultural equipment; leather products; machinery; materials for packing and shipping products; metal mining; metal shapes and forgings; non-metallic mining and processing and quarrying; ordnance and accessories; petroleum, natural gas, petroleum and coal products; 55 different repair services, ranging from automotive repairs to shoe repairs; rubber products; ships, boats and parts; smelting, refining, rolling of metal, and scrap salvage; stone, clay and glass products; technical, scientific and management services; textiles, transportation equipment; transportation services, i.e., air, offshore and inland water, railroad, transit, truck, pipelines, and storage.

The occupation that is most universally exempt and essential is that of the accountant and the cost accountant. He is found listed on the schedule of essential occupations of practically every one of the 35 activity groups. Next probably comes the pipefitter, and then the plumber. Machinists, electricians, carpenters and mechanics are listed as essential in every activity that employs them. Chemists and engineers of all descriptions are apparently universally classified as essential.

Among other jobs that are either exempt in all classifications or in some activities only are the following:

Airplane pilots; animators, assayers, babblers, bacteriologists, bakers, biologists, blacksmiths, boilermakers, brakemen, bricklayers, bus drivers, butchers, buttermakers.

Cabinetmakers, cameramen, cashiers, cheese makers, chief clerks, claim adjusters, clock repairmen, construction superintendents, cooks, coopers, coppersmiths, county agriculture agents, crane operators, crane riggers, cruisers, cutters.

Dentists, derrick engineers, die designers, makers and setters, dietitians, dispatchers, divers, donkey doctors, draftsmen, dyers.

Editors, electroplaters, elevator repairmen, embalmers, employment managers, engravers, entomologists, equipment-maintenance technicians in film studios.

Farm equipment mechanics, farm machinery operators, film editors, fire bosses, fire chiefs, fire marshals, fishermen, foremen, furnace installers and repairmen.

Gas-appliance servicemen, geologists, geophysicists, glass blowers, grain-elevator operators.

Harnessmen, hatchery operators, heel trimmers, hoisting engineers.

Illuminating technicians, inspectors, ironworkers, irrigation engineers.

Kiln burners, knife grinders.

Lard makers, lathe operators, layout men, leather stitchers, linemen, linotype operators,

lithographers, locksmiths, locomotive crane operators, logging contractors.

Meat smokers, medical internes, metallurgists, milk men, millers, milling machine operators, mill operators, millwrights, miners, molders, monotype-keyboard operators, motion picture production set architects, motorcycle mechanics.

Navigators, nurses, nurserymen.

Oculists, oil-burner-installation servicemen, optometrists, ore graders, osteopaths, painters, pathologists, pattern makers, personnel managers, pharmacists, photographers, physicians, physicists, pile drivers, pipeline repairmen, plasterers, police chiefs, police lieutenants, police sergeants, port captains, powerhouse engineers, power shovel operators, pressmen, printers, process and effect technicians, production managers, production set technicians, production supervisors, purchasing agents, pursers.

Radio news announcers, radio news editors, radio program directors, radio operations directors, radio station managers, railroad conductors, refrigerator repairmen, riggers, roofers.

Saddlemakers, safety engineers, sausage makers, scale repairmen, seamen, sheep shearers, sheet metal workers, ship captains, ship carpenters, shoe fitting repairers, soap makers, sole fitters, sound engineers, station masters, steam fitters, stone masons, storekeepers, structural-steel workers, surgeons, surveyors, switchboard operators, switchmen.

Tabulating machine servicemen, tailors, tanners, technical writers for photoplays, telephone repairmen, telegraphers, television engineers, timekeepers, tinsmiths, tiremakers, tool-and-die makers, tool makers, tractor operators, traffic managers, train directors, train masters, tree markers, truck drivers, tugboat captains, tugboat engineers, tugboat mates.

Upholsterers, veterinarians, war correspondents, watchmakers, welders, woods riders, x-ray technicians, yardmasters.

The data herein given have a wider application than appears in what has gone before. It is suggested that almost any person responsible for the conduct of an industry or a business or a service will be wise to prepare the data where they may be easily found. The Bulletins are on file in the offices of your local draft boards, the WMC offices, and the U. S. Employment Offices. The local boards and offices sometimes have stumbled in the effort to determine the essentiality of an industry or the essentiality of a worker. If you are able tactfully to help the boards or officials to find the references or suggest the classification that might concern you, the boards and officials undoubtedly will feel friendly. The recent Bulletin Memoranda received by the boards declare:

"Selective Service Regulations provide that in Class B2 shall be placed any registrant found to be a 'necessary man' in any industry, business, employment, agricultural pursuit, governmental service, or other service or endeavor, the maintenance of which is necessary to the war production program."

The "necessary man" and the "essential occupation" and "essential activity" are defined, in the Bulletins, thus:

"A registrant may be considered as a 'necessary man' in an activity necessary to war production, or in any other activity essential to the support of the war effort when such registrant is engaged in an essential occupation."

"An 'essential occupation' in any such activity is one which must be filled by a man with the

required degree of training, qualification, or skill for the proper performance of the duties involved. Occupations in order to be considered 'essential' must be such that, unless they are filled by men with the required degree of training, qualification, or skill, there will be a serious loss in the effectiveness of the activity.

"Essential occupations exist only in activities which are necessary to war production or are essential to the support of the war effort. If the activity is neither necessary to war production nor essential to the support of the war effort, then no occupation within that activity can be considered an 'essential' occupation and, in such case, there is no ground provided for occupational classification.

"When an occupation within an activity necessary to war production or essential to the support of the war effort is not itself an 'essential occupation,' then, in such case, there is provided no grounds for occupation classification."

Here is a sentence highly important:

"The list of essential occupations includes only those occupations requiring a reasonable degree of training, qualification, or skill to perform the duties involved and is restricted to occupations requiring six months or more of training or preparation."

Another arresting paragraph is this one:

"The fact that the activity or occupation in which registrant is engaged is not mentioned in any of the 'Activity or Occupational Bulletins' is not conclusive and if, under the general principles laid down in the Memorandum, a registrant would nevertheless be entitled to occupational deferment, he shall be so classified. . . . Consideration should be given to the following: (a) training, skill, or qualification of the registrant for the proper discharge of the duties involved; and (b) training, skill, or qualification of the registrant to engage in his occupation; and (c) availability of (other) persons with his qualification, skill or who can be trained to his qualification, to replace the registrant and the time in which such replacement can be made."

The six months' training specification as a yardstick to determine a man's status is not hard and fast. Elsewhere in the Bulletins this may be found:

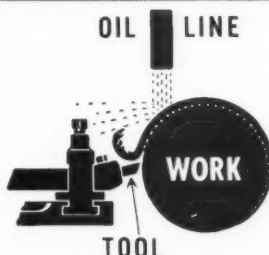
"The list in part three is restricted to occupations requiring 6 months or more training. However, additional occupations requiring less than this minimum training should be seriously considered." (From Bulletin 26-2.)

The success in securing deferment for an employee you need very much depends to a considerable extent upon your local board and the local officers of the War Manpower Commission and the Selective Service System. The boards are autonomous, practically a power unto themselves, and the local area and regional officers of the WMC-SSS have been given almost complete power to determine locally the essentiality of an activity and the essentiality of an occupation.

And now, furthermore, we have discovered, through the wisdom of Colorado's Governor Vivian, who acted to halt the induction of farm workers, that the governors of all states are vested with the ultimate power to determine who shall be called. This joker in the law apparently was lost to sight and memory until the Coloradoan revealed it again. Even the lawyers in Washington admit there is no doubt that the governor of each state has charge of the administration of the selective service in his state.

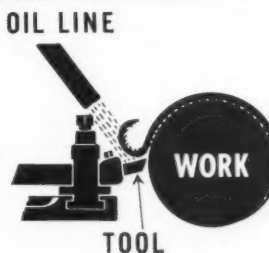
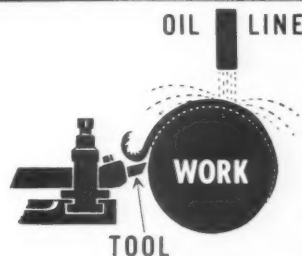
HOW TO MAKE CUTTING TOOLS LAST LONGER

(NUMBER ONE OF A SERIES)



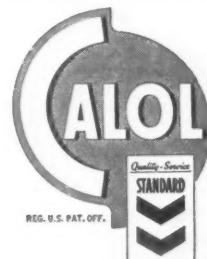
WRONG Cutting oil applied on the work only, even in the right volume, is partly deflected, and does not cool or lubricate the tool. A full line of Standard Calol Cutting Oils provides the right oil for all jobs, whether on tough steels, mild steels, alloy steels, or non-ferrous metals.

WRONG Here the volume is divided. Not enough oil reaches the tool or the work to properly cool or lubricate either of them. Carefully tested Calol Cutting Oils have a high oiliness and load carrying capacity, no corrosive action on metals, and will not separate in service or storage.



RIGHT The right volume applied where it completely covers the tool, work, and chip, properly cools, lubricates, and cleans. Ask your Standard representative to show you how Calol Cutting Oils, properly applied, can lengthen tool life, and speed production on your machines.

**STANDARD
OF CALIFORNIA**





GUARDS FOR THIS PLANT?

CERTAINLY—It Helps Protect America's Essential Weapons

The men and women in our war plants are America's most essential weapons. They **MUST** be kept on the job. Help prevent the millions of hours needlessly lost from work each year as the result of occupational diseases.

LAN-O-KLEEN*

is a powdered soap of *mildly* alkaline reaction compounded with granular corn-meal which has been impregnated (by an exclusive process) with lanolin, an oil almost identical to the natural oils secreted by the skin glands. Lan-O-Kleen works mildly and without harsh chemical action as it cleans the hands and the lanolin helps nature to maintain a normal, healthy skin condition.



WEST PROTECTIVE CREAMS

act as an external protection when rubbed on the exposed skin. These creams help guard the workers from most of the wide variety of skin irritants which may lead to dermatitis. A West specialist will help you determine which of the many West Protective Creams are best suited to protect the workers against the specific irritants handled in your industry.



*Trade Mark Reg. U. S. Pat. Off.

55 BRANCHES • HELPING TO GUARD INDUSTRIAL HEALTH • COAST TO COAST

CLIP TO YOUR BUSINESS LETTERHEAD PLEASE

West Disinfecting Company, Dept. W1, 42-16 West Street, Long Island City, N. Y.

Please send me a **SAMPLE QUANTITY** of Lan-O-Kleen with which I will give your claim a practical test. Please include folder explaining its use.

Name _____

Title _____

WEST DISINFECTING Company

42-16 WEST STREET • LONG ISLAND CITY • N. Y.

New Officers Here and There

Aircraft Parts Manufacturers Association: T. T. Arden of Grayson Head Control, Ltd., president; Edward Doak, Doak Aircraft Co., vice-president; R. R. Madison, Merco Co., secretary; Paul B. Belding, Cosco Manufacturing Co., treasurer.

The Wine Institute named Herman L. Wentz president. Officers re-elected were: J. B. Cella, first vice president; John B. Ellena, second vice president; Edmund A. Rossi, third vice president; Louis Petri, treasurer; H. A. Caddow, secretary-manager; A. R. Morrow, chairman of the board.

California Oil and Gas Association: Ralph B. Lloyd, independent oil producer, re-elected president; Reese H. Taylor and A. C. Mattei, vice-presidents; C. A. Johnson, treasurer; F. E. Foster continues as manager; and D. S. Kilgour, assistant manager.

Mining Association of the Southwest: Howard Kegley, re-elected president for the fifth time; H. W. Howe, John Herman and B. M. Snyder, vice-presidents; Victor Hayek, re-elected secretary-treasurer.

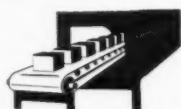
Structural Engineers Association of Northern California: James Bertrand Wells, president; M. C. Poulsen, vice-president; and Franklin P. Ulrich, secretary-treasurer. Mr. Wells is professor of civil engineering at Stanford University.

Oregon State Farm Chemurgic Committee: Morton Tompkins, master of Oregon State Grange, president; E. B. Aldrich, Pendelton, and Dean William A. Schoenfeld, Oregon State College, vice-presidents; W. H. Derry, Pacific Power and Light, secretary.

Utah Metal Mine Operators' Association: F. S. Mulock, U. S. Smelting Refining and Mining Co., president; J. O. Elton, International Smelting and Refining Co., first vice-president; Frank A. Wardlaw, Jr., second vice-president; E. H. Snyder, Combined Metals Reduction Co., third vice-president; and A. G. Mackenzie, secretary-manager.

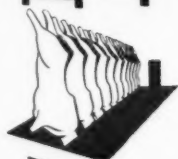
Western Pine Association: A. J. Voye, Klamath Falls, Ore., was elected president. John R. Gray, Spokane, Wash., and Angus J. Strange, La Grande, Ore., vice-presidents; C. L. Isted, Bend, Ore., treasurer; and S. V. Fullaway, Jr., Portland, secretary-manager.

Pacific Northwest Personnel Management Association at Spokane: Robert H. Williams, Crown-Zellerbach Corp., Portland, president; Harold Gowing, Iron Fireman Mfg. Co., Portland, J. M. Muckey, Tacoma, and E. J. Crosby, Spokane, vice-presidents; and Frank M. Womack, secretary-treasurer.



HIGH TEMPERATURE

The bearings on conveyors running through heat treating kilns were a real problem to lubricate. LUBRIPLATE No. 320 does an outstanding job.



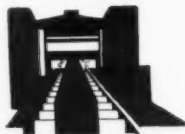
LOW TEMPERATURE

Refrigerator room equipment is subjected to cold and condensation. LUBRIPLATE No. 105-V gives perfect lubrication to 40° below zero.



HIGH SPEEDS

Wood Working and Textile Spindle speeds were limited by lubrication. LUBRIPLATE No. 1 has made the desired high speeds possible.



HEAVY LOADS

The high film strength of LUBRIPLATE No. 130-A permits rolling mills to use more pressure and run faster without damage to bearings.



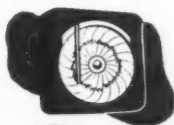
STEAM and CHEMICALS

Food Packers whose machines must be scrubbed with scalding water find LUBRIPLATE No. 107 doesn't wash off nor is it affected by food acids.



BALL BEARINGS

Reports from every industry show that LUBRIPLATE BALL BEARING Lubricant increases the life of bearings and keeps them running cool.



PRECISION BEARINGS

Minimized "drag" and the fact that LUBRIPLATE BALL BEARING Lubricant prevents rust has caused its adoption by numerous instrument makers.



UNDER WATER

A dredging company tells us that LUBRIPLATE No. 25 is the only lubricant they found that worked satisfactorily in under water gear boxes.

EVERY PLANT NEEDS LUBRIPLATE

We need more guns . . . we need more planes . . . we need more food . . . we need more of everything to win this war.

Proper lubrication, therefore, is the number one essential in every plant. That is why LUBRIPLATE lubricants are so widely used today. In addition to giving better lubrication, LUBRIPLATE prevents rust and corrosion even in the presence of many acids. It withstands water and doesn't "wash out"

of bearings. The enormous film strength of LUBRIPLATE permits heavier loads on bearings, yet it will not cause drag in the most delicate instrument.

LUBRIPLATE lubricants are manufactured in various fluid and non-fluid densities to meet every condition. They are packed in containers from one to five hundred pounds.

Send for a copy of "The LUBRIPLATE Film". It tells what LUBRIPLATE is doing in your industry.

LUBRIPLATE DIVISION

FISKE BROTHERS REFINING COMPANY

NEWARK, N. J.

SINCE 1870

TOLEDO, O.

WRITE FOR THE NAME OF THE DEALER NEAR YOU

LABOR

AND THE INDUSTRIAL WEST

Classification of Absenteeism Causes

Causes of the 6.5 per cent daily absenteeism in Los Angeles County have been classified by the Merchants & Manufacturers Association, after a careful study, as follows: "Illness and accident 35 per cent; community causes such as bad housing, bad transportation, social and recreational reasons, 5 per cent; management causes such as poor induction, poor placement, poor supervision, materials shortage, labor hoarding, poor planning, 15 per cent; personal business such as child care, marriage and pregnancy, business appointments, shopping, household duties, domestic trouble, 15 per cent; voluntary causes, such as bad morale from personal, management or community causes, too much money and 'plain A.W.O.L.,' 30 per cent."

Here is the way the Aircraft War Production Council has broken it down: Illness of employee—men, 74.3; women, 70.3; Illness or death in the family—men, 8.3; women, 12.4. Car trouble—men, 7.1; women, 4.9. Driver trouble—men, 2.3; women, 1.7. Tire trouble—men, 0.5; women, 1.1. Other transportation difficulties—men, 2.0; women, 1.4. Auto accidents—men, 0.5; women, 1.6. Military reasons—men, 1.3; women, .0. Employees needing care for children—men, .0; women, 1.6. Miscellaneous—men, 3.3; women, 4.9.

Aircraft Parts Wage Decisions

To put wages in the aircraft parts industry on a comparable basis with those in the airframe plants and prevent migration from one to the other, an average increase of 5c an hour was provided by the West Coast Aircraft Committee in a group of 60 separate decisions covering various southern California factories and two in the San Francisco Bay district. The cases were handled rapidly, being decided only two weeks after the national board handed them back to the regional body.

This was not a blanket decision for the entire aircraft parts industry, and many workers got no increase at all. The increases ranged from 2c to 15c an hour, and provided for progressive increases as workers gained skill if the company set definite scales, but limited the amount of increase in any period.

West Coast Aircraft Committee personnel consists of Edward R. Miller, undergraduate dean at UCLA, chairman and public member; Marshall Beaman of North American, and Graham Sterling of Northrop, industry members; William Brodie of United Auto, Aircraft & Implement Workers, CIO, and Roy Brown, v.p. Int'l. Assn. of Machinists, San Diego, AFL, labor members. Alternates are W. M. Rochlen, Douglas; W. J. Tuttle, Vultee; L. R. Becht, Consolidated; Edward Hertz, CIO; Donald Ketchum, independent welders; Martin Porter, AFL.

Safety Ace

Leslie Viar, machinist at the Willamette Hister Company, Portland, has been voted a "Safety Ace" award by the National Safety Council and was nationally honored on the Blue Network's "Men, Machines and Victory" radio program April 6, and given a \$100 war bond. His record included the following: Proposed and installed glass safety guards over emery wheels; suggested naming of "safety men" in the plant to whom workmen could give their ideas; suggested yellow lines to mark lanes for materials movement and clear areas; watches crane for bad hook-ups and sling loading; suggested handrails for all

stairways; operates own machine within safety rules while maintaining high output.

Union Attack Not Improper Influence

Publication by the United Mine Workers Union of material which the Tennessee-Schuykill Corp. claimed was false and defamatory, just before an employee election at the Chloride, Ariz., works, did not improperly influence the employees to vote in favor of the union, according to the National Labor Relations Board. Its ruling said:

"We cannot perceive how their effect might have been such as to coerce the employees or force them to act under duress in casting their ballots. If any defamatory statements were made and the company was damaged thereby, it has remedy elsewhere but it cannot complain that it has been adversely affected because a bargaining representative has been elected by its employees."

Portland Stabilizes

• Sixty war industries in the metropolitan Portland area put into effect last month a voluntary plan for stabilization agreed on by management and labor. They have agreed not to employ any person who cannot present a termination clearance issued by his former employer, a termination clearance issued by a joint appeal board, or a certificate of availability issued by the United States Employment Service.

Compensation Decisions

• Validity of the so-called "group" workmen's compensation insurance policies was recently upheld by the California District Court of Appeal, contrary to an opinion of

SHIP BUILDERS

and

SHIP REPAIRS

Machinists

Boilermakers

Pipefitters

Coppersmiths

Electric Welders

Equipped to handle the largest repair jobs

ALBINA ENGINE & MACHINE WORKS

INCORPORATED

PORTLAND

OREGON

the attorney general of the state that such policies constitute a discriminatory rebate in violation of the minimum rating law. In another case the Supreme Court of California held that employees injured in an accident to an automobile furnished by the employer for transportation to and from work, the employees paying the running expenses pro rata by a deduction of \$4 each monthly from their wages, were entitled to compensation. It was held that this took employees out of the "going and coming" rule, under which an employee is not entitled to compensation for injuries going to and coming from work.

Here And There In Labor Picture

Cannery workers in northern California pay 14.3 per cent increase approved by Stabilization Director Byrnes, raises skilled workers now getting 73c to \$1.05 to new level of 85c to \$1.15, women common laborers increased 10c making their hourly rate 70c, women inspectors and floor ladies raised from 70c to 85c an hour, piece work also adjusted. . . NLRB refuses to involve itself in jurisdictional dispute and dismisses AFL machinists petition for collective bargaining election at three plants of Timm Aircraft Co. in southern California because of conflicting claims between machinists and carpenters. . . Richfield and General Petroleum must issue passes to their tankers to union agents according to tentative NLRB examiner's report. . . WLB orders AFL operating engineers to end strike against Southern Service Laundry System in San Diego and laundry to rehire four operating engineers who had walked out. . . Int'l Federation of Architects, Engineers, Chemists and Technicians (CIO) elected bargaining agent for office and laboratory

employees of American Smelting & Refining Co. at Selby, Calif. . . special wage board recommends to California Industrial Welfare Commission 40-hour week and 65c an hour minimum be specified for women and minors employed in handling food products after harvest. . . AFL unionizing Los Angeles policemen by organizing police unit of American Federation of State, County and Municipal Employees. . . International Order of Operating Engineers postpone strike in San Francisco cold storage warehouses in response to appeal from the armed forces. . . 55 Imperial Ice & Development Company employees at El Centro, Calif. return to work on order of federal conciliation commissioner. . . brewery workers in San Francisco Bay district ditto after week's absence; strike because employers, allegedly for fear of reprisals, refused to substitute written for previous oral agreement closed-shop contract to protect brewery drivers from raiding by other unions. . . 3c an hour increase for 10,000 production and maintenance employees of United States Firestone and Goodyear Rubber Companies in southern California recommended by WLB panel. . . more than 1,000 workers in nine lumber manufacturing plants in Spokane walked out April 7 in protest against suspension of 7 1/2c an hour wage increase. . . Hollywood cowboys fail to get increase from \$11 a day to \$16.50.

DANDUX CANVAS PRODUCTS

Our Los Angeles plant is equipped and staffed to provide Western industry with quality products, and prompt friendly service of exactly the same calibre which the Dandux trade mark has assured other canvas users for years.

For your requirements of Tarpaulins, Bags, Covers; in fact, anything made of Canvas, or if only for assistance on any problem in our line, consult our Los Angeles plant.



C. R. DANIELS, INC.

Manufacturers of Everything of Canvas

811-815 TRACTION AVE., LOS ANGELES, CALIF.

NEW YORK BOSTON CHICAGO DALLAS
Buffalo Cincinnati Newark Pittsburgh
Cleveland Detroit Philadelphia and other cities

Cotton Duck Mills at Albertain, Md.



NIGHT OR DAY

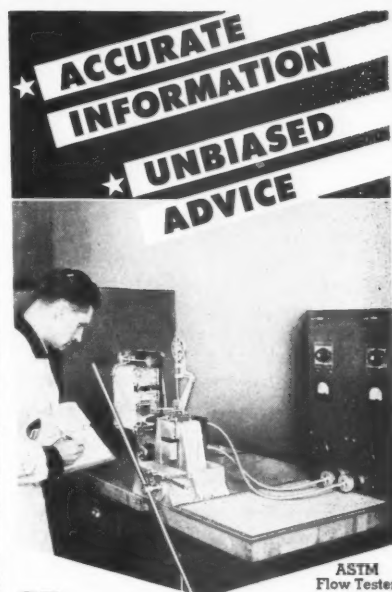
Make deposits when you want to right at the nearest mailbox. No need to "go to the bank." Nine out of ten transactions are routine that can be handled by our Mailway service, night or day, Sundays and holidays. Our special Mailway envelopes and passbook make service quick and safe.

Open a Mailway account by mail

CROCKER FIRST NATIONAL BANK

OF SAN FRANCISCO
California's Oldest National Bank

Member Federal Deposit Insurance Corporation
ONE MONTGOMERY STREET



on PLASTICS

Plastics Institute has neither materials nor products to sell . . . only service and facilities. The value of plastics depends on proper application to the job. We help you determine what plastics can do for you.

CONSULTING • Extensive information files and a widely experienced staff are at your service. Consult us on design, choice and use of plastics for your product.

RESEARCH • We have a well-equipped laboratory for raw material research, and facilities for making experimental models. Your plastics problems will receive expert analysis.

TESTING • Complete testing equipment available—chemical, physical, static and dynamic tests.

Consider Plastics

FOR . . . Industrial finishes . . . parts fabrication . . . new products . . . design improvement . . . production speed . . . cost reduction . . . SUPERIOR SERVICE.



176-W S. Alvarado, Dept. 5
LOS ANGELES

1220-W Chanin Bldg. Dept. 5
NEW YORK

626-W LaSalle-Wacker Bldg. Dept. 5
CHICAGO

Predicts Big Market Ahead

EVERY man, woman and child in the United States is going to need \$1,000 worth of goods and services immediately after the war, and within the first two years of peace they will have to be supplied at a rate 35 per cent greater than were sold in the boom year of 1929, according to Don G. Mitchell, vice-president in charge of merchandising, Sylvania Electric Products, Inc., speaking at a meeting in San Francisco last month.

He predicted many remarkable developments. Among them were:

An automobile in the Cadillac class, weighing only 2,000 lbs. and selling for

\$1,000, using 100-octane fuel and having very high compression, with a smaller model weighing 1300 lbs. and selling for \$600. At least one aircraft manufacturer already has such a car on the drawing boards.

Bridges and other metal structures considerably lighter than at present. Half the weight of a large bridge is now devoted to holding up its own weight. Aluminum people say that aluminum will be the metal, steel men say alloy steels.

Housing that costs less than present homes, and worth more, as the result of developments in prefabrication.

Fluorescent lamp sales three to four times as great as at present.

Cathode ray asilosopes for many uses, two or three of them in every transport plant and ground station.

Flashing tubes that will record action



• Don Mitchell outlines post-war needs and developments. Robert Bishop at the right.

at any speed, such as the flattening of a golf ball when struck and the denting of a football by the player's toe in kicking.

Infra-red lamps, now beginning to be used for drying paints, will be used also for heat treating metal products and kiln drying of lumber from the inside out in a few minutes.

Mr. Mitchell's view is that rationing will be necessary for a time after the war, to prevent the flood of ready cash available through savings in war bonds descending upon the market before the manufacturing facilities of the country have time to make their conversion from war- to peace-time goods.

Mr. Mitchell also spoke before the Advertising Club in Los Angeles. He was accompanied on his trip along the coast by Robert H. Bishop and A. R. Oliver, sales managers of the lighting and radio tube divisions, respectively, and E. P. Demarest, manager of the western division of the company.

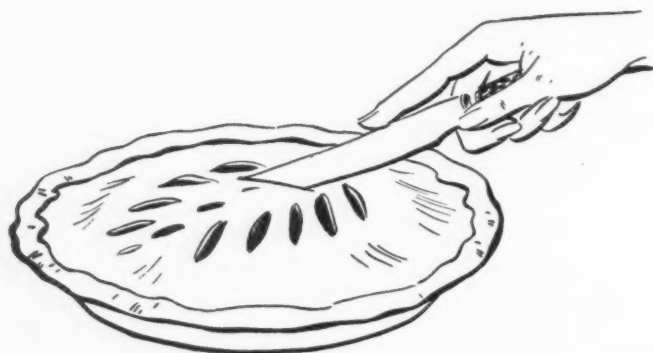
Plastic Punches Quicker To Make

Use of plastics has reduced the time of making punches for metal forming presses from weeks to hours, George H. Prudden of Vega Aircraft Corporation reported to the American Society of Tool Engineers' convention in Milwaukee in March.

The plastic punch is formed and sized in the die, he said. After the first forming operation, the punch is re-inserted in the die, enough heat is applied to melt the surface material and the punch put under compression. With this process, mating accuracies almost impossible to achieve with steel are readily secured.

Typical punches are produced in around four hours whereas comparable steel punches require four weeks merely for the bluing-in. According to Mr. Prudden, the plastic punches wear every bit as well as the steel varieties.

HOW WILL IT CUT BEST?



WE MIGHT MEAN A PIE, but we don't. We refer instead to the paper stock to be used in the next bulletin you are working on now. Some bulletin sizes come into existence like Topsy, others are systematically planned to utilize every inch of stock without waste. Folders made in random sizes may cost as much as 20% more than the same folders figured a fraction of an inch smaller, top or sides. Do you know if your direct mail material is being laid out now to take advantage of standard stock sizes? If you are in doubt, why not have a representative of the McCarty Company call?

THE McCARTY COMPANY

Advertising In All Its Branches

LOS ANGELES: Bendix Building • SAN FRANCISCO: Rialto Building
Member... AMERICAN ASSOCIATION OF ADVERTISING AGENCIES



Wenatchee Fruits By Air Transport Likely

AIR transportation eventually will play an important part in the distribution of fruits and probably vegetables from the Wenatchee district in Washington, according to G. R. Coe, sales manager, Fruit Growers Service Co., Inc., of Wenatchee, in commenting on the article on air cargo published in the March issue of *Western Industry*. He says:

"The Wenatchee District of Washington produces around 17,000 carloads of apples annually, which are distributed in the fresh state. These apples are harvested and cold stored in the fall and are shipped over a period of nine to ten months. Prior to the war, around 25 per cent to 30 per cent of the production was shipped into foreign markets throughout the world.

"In addition to apples, this area produces some 300 cars of sweet cherries, 600 to 700 cars of apricots, and a very substantial volume of winter pears and other fruits, which are marketed in the fresh state. In addition to these fruits there are some 15,000 tons of Bartletts produced for canning. There is also a large volume of lower grade apples processed. The dehydration of apples and other fruits has increased materially due to war conditions.

"We believe air transportation will eventually play an important part in the distribution of fruits and probably vegetables from this area. A commodity like sweet cherries, which is highly perishable, would seem to be particularly adapted to air transportation. At the present time the cherry production here is concentrated in the area adjacent to Wenatchee, therefore the assembling and delivery of the fruit to our present air fields would not present a very serious problem. It is conceivable that fresh cherries might even be trans-

ported by air to foreign countries after the war is over.

"Winter pears, also apples, will undoubtedly be handled in substantial volume by air as soon as facilities are available.

"The perishable nature of these fruits will be one of the important reasons for the use of quick air transportation. Mr. Oursler mentioned the possibility of air transportation in connection with the distribution of dehydrated products. It is true that these items are less bulky than fruit in the fresh state; however, they are not highly perishable and, unless time is an important element, we would be inclined to question the necessity for air transportation.

"So far as the fruit industry is concerned, cost of air transportation, also the difficulties that might be encountered in the assembling of fruit for loading at shipping point, also the distribution from destination airports to the consumer, offer problems. However, as facilities are developed, these apparent difficulties would undoubtedly be overcome. We agree with

GROUND FACILITIES ESSENTIAL

In regard to practical questions, it should be said that the most serious problem confronting this and many other communities is the proper location and construction of ground facilities to handle air cargo. There has been very little data available as to the length and strength of runways that may ultimately be necessary. Naturally, in these times information containing the laden weight and take-off characteristics of the new types of cargo planes are not made public.—Walter A. Robde, Manager Transportation Department, San Francisco Chamber of Commerce.

Mr. Oursler that air transportation could not eliminate rail and water transportation, but would only supplement these facilities; and we are convinced that it is only a question of time until some of the perishable commodities produced in this area will be transported by air."

\$30,000,000 Catalinas

Consolidated Aircraft Corp., San Diego, has received a \$30,000,000 order for PBY Catalinas from the Navy in addition to previous contracted deliveries now being made. These will serve as long-range patrol bombers. It was a Catalina which sighted the German battleship Bismarck, and which detected the Japanese fleet approaching Midway Island.

OPPOSED TO SUBSIDY

I am of the belief that our system of fair competition among the various forms of transportation cannot survive if one is to be subsidized. Of course this would be tempered to the extent that where the government required certain routes or appliances, then the latter should stand the expense of such requisites for the reason the Government stands the expense of marking, through various mediums, the paths of water ways.

This is an important aspect. If the air lines are to compete, it should be on the same basis with the other forms. This would not be impossible of realization if rates are predicated upon a cost of operation basis so that those who desire to use a service will be required to pay what the traffic will bear.—H. A. Lincoln, traffic manager, Fibreboard Products, Inc.

IF IT'S WORTH MARKING AT ALL "MARKWELL" Crayons and Chalk

Marking Crayon No. 150

For use on paper, cardboard and smooth wood. Round. Colors—black, blue, green, red and yellow. Size 4 1/8 x 1/2.

Lumber Crayon No. 1350

For use on smooth and rough lumber. Hexagon. Colors—black, blue, green, red, white, yellow. Size 4 3/4 x 1 3/8.

MARKWELL RAILROAD CRAYON

In constant demand since first manufactured in 1878. Size 4x1 inches. Colors—white, red, blue and yellow.

MARKWELL CARPENTERS' CHALK

Made in hemispherical cakes. Colors—white, red and blue.

WHITE SCHOOL CHALK

Minimum Order
25 Gross

MARKWELL SOAPSTONE

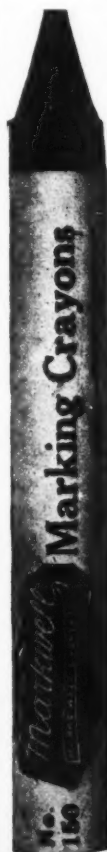
For marking on metals. Sizes

5 x 1/4 x 1/4 ;
5 x 1/2 x 1/8 ;
5 x 3/4 (round).

The above are only two of the many shipping room necessities which can help you speed deliveries. Write for Catalog No. 78 or phone our nearest depot.

FISHSTROM STAPLE CO.

Los Angeles - - 122 E. 7th St. . . VAndike 4446
San Francisco - - 88 First St. . - - GARfield 6694
Oakland - - - 608 16th St. - - - GLencourt 1174



THE WEST ON ITS WAY

This is only a partial list of the industrial projects, throughout the eleven western states.

ARIZONA

DWELLING UNITS—E. W. Duhamel Const. Co., 3719 North Central Ave., Phoenix, received \$248,698 contract from Federal Public Housing Authority, San Francisco, for construction of 134 temporary dwelling units at Avondale, Maricopa County, Ariz.

HANGAR—J. S. Sundt, 440 S. Park Ave., Tucson, has been awarded contract by U. S. District Engineer Area Office, Phoenix, to construct hangar in Pima County, Ariz., at a cost of less than \$500,000.

TEMPORARY DWELLINGS—Joint Const. Co., Tucson, has been awarded a \$163,800 contract by the Federal Public Housing Authority, San Francisco, for building 100 temporary dwelling units in Tucson, Ariz.

PARKING APRON—Arizona Sand & Rock Co., Phoenix, will construct a parking apron at an Auxiliary Operating Base in Pinal County, Ariz. Contract for more than \$100,000 let by U. S. District Engineer Area Office, Phoenix.

TEMPORARY DWELLING UNITS—George C. Gammell, Box 161, Prescott, Ariz., has been awarded \$110,097.98 contract by Federal Public Housing Authority, San Francisco for construction of 64 temporary dwelling units in vicinity of Luke Field, Maricopa County, Ariz.

SEWAGE TREATMENT PLANT—Del E. Webb Const. Co., Phoenix, has been awarded a contract under supplemental agreement by U. S. Area Engineer, Kingman, for construction of a sewage treatment plant in Mohave Co., Ariz., to cost in excess of \$100,000.

HOSPITAL FACILITIES—Del E. Webb Const. Co., Phoenix, will construct additional hospital facilities at an airfield in Maricopa County, Ariz., on contract let by U. S. District Engineer Area Office, Phoenix, to cost less than \$100,000.

AIRFIELD FUELING SYSTEM—Wonderly Construction Co., 269 Lime Ave., Long Beach, has been awarded contract by Area Office, Phoenix, for construction of an A. F. gasoline fueling system at an airfield in Maricopa County, Ariz., to cost less than \$100,000.

TEMPORARY DWELLINGS—Murphy-Keith Building Co., Tucson, Ariz., has been awarded \$87,000 contract by Federal Public Housing Authority, San Francisco, for construction of 50 temporary dwelling units in Marana, Pima County, Ariz.

CALIFORNIA

WAR HOUSING—J. K. Thomas and Theo. A. Beyer Corp., Los Angeles, awarded \$474,184 contract for construction of "Presidential Victory War Housing Project" in San Diego by the Federal Public Housing Authority.

BUILDINGS—Trewitt-Shields & Fisher, Fresno, have received contract from U. S. Engineer Office, Sacramento, for building construction in Stanislaus County, to cost under \$500,000.

NAVAL AIR BASE BUILDING—Earl W. Heple, 494 Delmas Ave. San Jose, has been awarded a supplemental contract of \$1,442,500 by the Bureau of Yards and Docks, Navy Department, Washington, D.C. for further expansion and improvement of the naval air base at Moffett Field, Santa Clara County, Calif.

REMODEL HOSPITAL—W. J. Hunter, 660 Heliotrope, Los Angeles, has been awarded contract by U. S. District Engineer Area Office, Los Angeles, for demolition and reconstruction of the 5th, 6th and 7th floors and reconstruction of elevator shaft at a hospital in Los Angeles County, Calif., to cost less than \$100,000.

WANT TO LOWER OPERATING and original EQUIPMENT COSTS?

Four District Offices in the West with personnel trained in synthetic and natural rubber, ready to assist in developing your current and post-war requirements of specialized mechanical rubber products.

A staff of technicians with modern equipped laboratories at our mills are available to you—without cost or obligation.

Many commonly used mechanical rubber products in industry today were originally developed by Goodall. Each product resulted from a definite need by progressive industry for a rubber product having More Utility — Longer Life — thus More Economical.



"73 Years of Know-How—our most valuable commodity"

GOODALL RUBBER COMPANY

RUBBER HOSE • BELTING • PIPE • EXPANSION JOINTS • SPECIALTIES

Mills: Trenton, N.J.—Established 1870
WESTERN OFFICES

Los Angeles, San Francisco, Seattle, Salt Lake City

MAKE MONEY out of these Western Industrial Developments!

Want to know what's happening every month in the Western Industrial picture? Then read the "Sales Prospector," monthly bulletin issued in news letter style.

The "Sales Prospector" is privately circulated for the use of business executives interested in increasing sales in the Industrial West. Each month it gives hundreds of sales leads, personnel changes, and all of the principal industrial developments in the Eleven Western States. For an example of the type of information which this service contains, read the partial list of major Western Industrial Developments in the "West on its Way" section of WESTERN INDUSTRY.

Write today for subscription rates and FREE copy of the "Sales Prospector." It will pay you to keep posted!

WESTERN INDUSTRY'S SALES PROSPECTOR

503 Market Street

San Francisco, Calif.

ENGINEERING MAINTENANCE SHOP—Ivan M. Wells, 201 S. Linden Dr., Beverly Hills, has been awarded contract by U. S. District Engineer Area Office, San Bernardino, for construction of an engineering maintenance shop at an Air Depot in San Bernardino County to cost less than \$100,000.

PIER CONSTRUCTION—Shannahan Bros., Huntington Park, have been awarded a \$248,480 contract by E. Armar, Long Beach Port Manager, for construction of wharf and bulkhead system at Pier D, Long Beach Harbor.

GASOLINE ABSORPTION PLANT—Union Oil Co. has received approval of the War Production Board on allocation of materials for construction of a second natural gasoline absorption plant in the Santa Maria Valley oil field. The plant will require an investment of more than a half million dollars and will have capacity to handle 18 million cubic feet of wet gas per day.

FOOD DEHYDRATING PLANT—Ellis H. Spiegel, Salinas, plans construction of a half million dollar food dehydrating plant near Salinas.

ARMY BUILDINGS—Robert E. Millsap, 437 S. Hill St., Los Angeles, has been awarded a contract by U. S. District Engineer Office, Los Angeles, for construction of approximately ten army buildings at an air base in San Bernardino County to cost over \$100,000.

AIR BASE BUILDINGS—Griffin Co., Los Angeles, will construct additional utilities, hangar buildings and utilities at an air base in Riverside County. Contract for less than \$500,000 let by U. S. District Engineer Office, Los Angeles.

ADDITIONS TO NAVY HOSPITAL—P. J. Walker, Los Angeles, has been awarded contract for construction of additions to the Navy Hospital in Long Beach. The construction will be of temporary type and will provide for 850 beds. Cost is \$2,182,500.

CENTRAL STEAM PLANT EXTENSION—C. C. Moore & Co., San Francisco, has been awarded a contract for construction of extension to central steam plant at a military location in Sacramento County. Contract between \$100,000 and \$500,000 granted by the U. S. District Engineer Office, Sacramento.

RIFLE RANGE—McNeil Construction Co., 5860 Avalon Blvd., Los Angeles, and 409 Main St., Pleasanton, will construct a rifle range in canyon north of Seabees base in Camp Parks, to cost about \$150,000.

HOSPITAL BUILDING—Alco Construction Co., 5423 Flemish Village Lane, Los Angeles, has been granted contract by U. S. District Engineer Office, Los Angeles, for construction of a hospital building at an army base in Kern County, to cost less than \$500,000.

CARGO VESSELS—D. W. Nicholson Corp., San Leandro, has been awarded a governmental contract in excess of \$1,000,000 to construct vessels for the Army.

DREDGING HARBOR CHANNEL—Case Construction Co., San Pedro, has been awarded a contract by U. S. District Engineers, Long Beach-San Pedro Area Office, for dredging a channel in a harbor in Los Angeles County, Calif., to cost more than \$100,000.

AIRCRAFT PLANT FACILITIES—Douglas Aircraft Co., Inc., of Santa Monica, has received authorization of increase of \$3,890,000 in its contract with the Defense Plant Corp., Washington, to provide additional facilities at one of its plants.

COLORADO

BUILDINGS, UTILITIES AND STRIP CLEARING—Platt Rogers, Inc., Pueblo, Colo., has been awarded contract by U. S. District Engineer Office, Denver, for construction of eight buildings and utilities and strip clearing for a flight strip, to cost more than \$100,000.

CINDER BLOCK AND STORAGE BUILDING—Geo. O. Teats, 1701 N. Nevada, Colorado Springs, has been awarded contract for construction of a cinder block and concrete lub-oil storage building in El Paso County, Colorado, by U. S. District Engineer, Denver, for less than \$50,000.

HEATING PLANT—S. C. Cook, Denver, has been awarded contract for construction of cinder block with brick chimney lub-oil heating plant in Denver County, Colorado. Contract for more than \$50,000 let by U. S. District Engineer Office, Denver.

IDAHO

BUILDINGS—J. O. Jordan & Son, Idaho, have been awarded a \$65,000 approximate amount contract by U. S. Army Engineers, Portland, for construction of miscellaneous buildings at military site in Ada County, Idaho.

Your Chemical Reporter



The Chemical Industry in many ways is very secretive about its processes, operating technique and production schedules. In the same manner the industry is reticent to discuss its future plans except as it applies to the development of new markets. However, this monthly column endeavors to bring you new applications of chemicals as they become known, and pass on helpful suggestions which may be applicable to your operations.

Synthetic Rubber Program in California

The Synthetic Rubber Program in California is progressing to the point where we may soon have a quantity of synthetic rubber available for civilian use to ease the strain on our rubber stock piles.

The production of this product calls for the use of many chemicals such as sulphuric acid, caustic soda, and sulphur.

Soon, in California, both the alcohol and the petroleum processes will be in operation. Many wineries throughout the state are being converted to produce industrial alcohol from molasses—still which otherwise would not be in use except during the brandy distilling season. The center of the petroleum-synthetic rubber activity is naturally in Southern California.

It is also interesting to note that this industry will be one of the largest users of high quality soap. The oil, chemical and soap manufacturers, among many others, will thereby benefit by the production of synthetic rubber.

Split Carloads

A recent revision of ODT ruling now allows a carload to be split between two consignees located within the switching limits of the destination. This formerly was not allowed unless the car consisted of two tariff minimums with two bills of lading involved. This revision allowing split carloads to the same destination with a payment of the on-carrying switching charge should be of real benefit to many industrial concerns.

One Solution to the Labor Shortage Problem

A move by the U. S. Employment Service which is receiving prompt cooperation from industrial organizations will probably draw hundreds of white collar workers into essential war production on a part-time basis. The idea is to place clerks, salesmen and others of the "white collar class" in evening and week-end jobs for 12 to 24 hours each week. The airplane industry is currently encouraging this group of people to work a "half shift" in the evening from 7 p.m. to 11 p.m. six days a week, and have thereby gained 24 extra man-hours per person each week. This procedure has stepped up airplane production considerably at no apparent harm to the individuals cooperating.

Warehousemen Urge Early Deliveries

The warehousemen have a legitimate beef against the tardy truck driver. You probably have heard this from your warehousemen and we have heard it from any number of different warehousemen up and down the coast. They like to receive their goods at least an hour before quitting time so that the truck can be unloaded, the goods stocked away in the warehouse and the doors closed before quitting time. May we, therefore, suggest to everyone that they try to complete their deliveries by 3 p.m. or thereabouts or call for their pick-ups before this hour. The warehousemen will cooperate better with truck drivers if this consideration is shown.

The shipping clerk has his problems also. Trucks arrive without any hand tag and ask to pick up a supposedly waiting order. Half the time the truck driver doesn't know what he wants and no order is on hand for him. The truck, therefore, goes away empty when transportation is such a vital necessity these days. We suggest that you furnish your trucks with adequate hand tags listing the details of the order so that the information will be available just in case the previous purchase order was lost in the mail.

Your Chemical Reporter will bring you helpful chemical information each month through the courtesy of Stauffer Chemical Company, San Francisco, Los Angeles and North Portland.

THE WEST ON ITS WAY

MONTANA

WATER DISTRIBUTION AND SANITARY SEWER SYSTEM—Utility Builders, Great Falls, received contract under \$50,000 for construction of water distribution and sanitary sewer system in Cascade County, Montana, from Seattle District Office of U. S. Engineers.

BUILDINGS—Dudley-Anderson Co., Great Falls, has been awarded contract by Seattle District Office of U. S. Engineers to construct buildings in Glacier, Valley and Fergus counties, Montana, costing from \$100,000 to \$500,000.

ELECTRICAL DISTRIBUTION AND LIGHTING SYSTEM—Rowe Electric Co. of Great Falls, Mont., will build an electrical distribution system and a lighting system in Cascade County, Mont., under two contracts, each for less than \$50,000, awarded by Seattle District Office of U. S. Engineers.

NEVADA

TEMPORARY DWELLING UNITS—E. A. Kaiser Co., Beverly Hills, has been awarded a contract by the Federal Public Housing Authority, San Francisco, for construction of temporary dwelling units for Las Vegas, Nev., to cost \$307,862.

SEWAGE TREATMENT PLANT—H. F. Hendrickson Co., Los Angeles, will construct a \$42,170 sewage treatment plant in Las Vegas, Nev. Contract let by Federal Works Agency, Los Angeles.

SCHOOL BUILDINGS—G. Panicari, Lander St., Reno, has been awarded a \$74,558.75 contract by the Public Buildings Administration, Washington, D.C., for construction of Units A and B at the grade school in Las Vegas, Nev.

DWELLINGS—Nordin Construction Co., 3030 Exposition Blvd., Los Angeles, has been awarded contract for construction of dwellings on Highway 91, Las Vegas, Nev., for the Vegas Village, Inc., to cost about \$750,000.

NEW MEXICO

HOUSING AT AIRFIELD—Ponsford Bros., El Paso, Tex., were awarded contract by the U. S. District Engineer Office, Albuquerque, for construction of additional housing at an airfield in Otero County, N. M., to cost less than \$500,000.

AIRFIELD BUILDINGS—McMilland & Glover, Lubbock, Tex., will construct group of additional buildings at an airfield in Curry County, N. M., on contract awarded by U. S. District Engineer Office, Albuquerque, for less than \$500,000.

DUST PALLIATIVE TREATMENT—Skousen Bros., Albuquerque, have been granted a contract for dust palliative treatment at an airfield in Otero County, New Mexico. Contract for less than \$500,000 let by U. S. District Engineer Office, Albuquerque.

AIRFIELD CONSTRUCTION—Henry Thygesen & Co., Korber Bldg., Albuquerque, has been awarded contract by U. S. District Engineer Office, Albuquerque, for construction of base motor pool facilities at an airfield in Otero County, N. M., to cost less than \$200,000.

OREGON

ALCOHOL PLANT—The first unit of an industrial alcohol plant to manufacture grain alcohol from wheat is being built at Heppner, Ore. The unit will utilize about 300,000 bushels of wheat a year and will turn out 2000 gallons of alcohol in addition to 10 tons of high protein livestock feed each day.

ADDITIONS TO SCHOOLS—Charles R. Schmiedeskamp, Oswego, Ore., will build five new frame buildings as additions to schools in Portland area to relieve crowding near Kaiser Shipyards. \$139,453 contract awarded by the FWA, Region VII, Seattle.

WAR HOUSING—Sound Construction & Engineering Co., Seattle, received a cost-plus contract of about \$180,000 for construction of 60 houses at Tillamook, Ore., for use by naval aid station families. Contract let by Federal Housing Agency, Seattle.

COMPENSATION INSURANCE

Associated's Participating Workmen's Compensation insurance contract has resulted in reduced costs and fewer lost time accidents for many large industrial concerns, contractors and government agencies.

It provides expert safety engineering facilities by men who "know the job."

Consult Our Engineering Department



Home Office:
SAN FRANCISCO
L. H. Mueller, *Chairman*
L. S. Moorhead, *President*

ASSOCIATED INDEMNITY CORPORATION

Branch Home Offices: New York, Chicago, Dallas,
Los Angeles, Portland, Ore.



Downs CRANE WHEELS

Downs Crane Wheels are furnished in Pin and Keeper, Plain and Live Shaft types in tread diameters from 7½" to 24" inclusive. Wheel load capacities to suit any condition. Full roller bearing wheel assemblies are ready for mounting in crane end trucks. Also available with bronze bushings or any type of ball or roller bearings for any style of mounting.

Send for Bulletin No. 3200 with complete specifications

DOWNS CRANE & HOIST CO.
540 WEST VERNON AVE., LOS ANGELES, CALIF.

UTAH

CIVILIAN WAR HOUSING—Olsen Construction Co., Hill Field, Utah, will build civilian war housing in Tooele County, Wash., on contract awarded by U. S. District Engineer Office, Salt Lake City, for less than \$500,000.

BUILDINGS AND EQUIPMENT—Kalunite, Inc., 600 W. 33rd St. South, Salt Lake City, have been granted \$990,000 additional funds by the Defense Plant Corp., Washington, D. C., for more buildings and equipment in a processing plant now being built in Salt Lake City.

AIR DEPOT BUILDING—Paul Paulsen Co., Salt Lake City, will build a repair building at an Air Depot in Weber County, Utah. Contract for less than \$100,000 awarded by U. S. District Engineer Office, Salt Lake City.

HOUSING PROJECT—Jas. I. Barnes Construction Co., Salt Lake City, will construct a \$317,200 housing project within the Reservation of the Desert Chemical Warfare Depot near St. John, Utah. Contract granted by Federal Public Housing Authority, Kansas City, Mo.

WAAC BUILDING—Jacobsen Construction Co., Salt Lake City, Utah, will build a WAAC building at a camp in Salt Lake County. U. S. District Engineer Office, Salt Lake City, let contract for less than \$100,000.

WASHINGTON

RUNWAYS, APRONS AND TAXIWAYS—Northwest Pavers, Spokane, have been awarded two contracts, each costing from \$100,000 to \$500,000, for runways, aprons and taxiways in Spokane County, by Seattle District Office of U. S. Engineers.

DRYDOCK—The Haddock Construction Co., Pasadena, Calif., has been awarded contract for construction of a floating drydock of 400-ton capacity by Headquarters of the 13th Naval District. The drydock, estimated to cost \$250,000, will be built and launched at Olympia.

HOUSING UNITS—Mullen & Strand, Seattle, will construct 250 permanent housing units in Everett. Contract for \$748,000 awarded by Federal Public Housing Authority.



Stroke Model 5-H-I-I-R

Air Superiority!

Speed production, double, triple each day's schedules of parts needed for bombers, fighters, pursuit planes. "Keeping 'em flying" demands the supreme effort of every man, every machine on the production line.

PRODUCTIMETERS

give accurate count or measurement for production control on this vital front. They conserve man-hours, prevent waste. There's a standard Productimeter for practically every need: Stroke, Rotary, Lineal, Wire Measuring, Conveyor, Predetermined, Electric. They're built for speed, accuracy and day after day hard use.

Standard models stocked for prompt shipment on West Coast. Write our nearest distributor for complete information.

Irving G. King & Company, Los Angeles
Mailler Searles, Inc., at San Francisco, Portland and Seattle

DURANT MANUFACTURING COMPANY

1969 North Buffum Street PRODUCTIMETERS Milwaukee, Wisconsin

**Don't send a man up there—
Send the Lubricant
and keep him on the floor!**



Every time an oiler climbs up on a press or crawls over a crane you take the risk that he will get a bad fall—or will overlook a vital bearing in his hurry.

Yet he can't work with the equipment running and you can't afford any down time—either to lubricate by hand, or what is worse, to replace burned-out bearings.

There's no need to send a man up—no need even to slow down, let alone stop machines. And there's not the slightest need for you to take a chance on dry bearings. Install Farval and send the lubricant instead!

The Farval Centralized System delivers lubricant under pressure from a convenient central station to every bearing on the machine, no matter where located. Each bearing receives the correct amount through the Dualine Measuring Valve and—not a one is missed.

Save men—save bearings—install Farval!

THE FARVAL CORPORATION, 3269 E. 80th St., Cleveland, Ohio
San Francisco Los Angeles Portland Seattle

FARVAL CENTRALIZED SYSTEMS OF LUBRICATION

Your Wartime Answer to Rust and Scale Removal Problems!

The greater load under which equipment is operating today has multiplied rust and scale removal problems in plants everywhere. Perhaps your plant, too, is facing this situation right now. If so, you will find that OAKITE COMPOUND No. 32 is the best, most dependable answer for QUICKLY, SAFELY, effectively removing insulating rust and scale deposits from such water-cooled, steam-jacketed or water-circulating equipment as:

METAL WASHING MACHINES
REFRIGERANT CONDENSERS
DIESEL AND GAS ENGINES
FEEDWATER HEATERS
OIL COOLERS & PREHEATERS

AIR & GAS COMPRESSORS
VACUUM PUMPS
SPOTWELDING MACHINES
COOKERS & BLANCHERS
CAN WASHING MACHINES

New, 24-page manual describes methods, gives formulas. Write today to nearest address listed below for your FREE copy!

OAKITE PRODUCTS, INC.

LOS ANGELES 1001 East First St., Tel. Madison 1544
SAN FRANCISCO 115 Townsend St., Tel. Douglas 5640
OAKLAND 1505 Wood St., Tel. Glencourt 2750
SAN DIEGO 310 Fifth Ave., Tel. Franklin 0312
SEATTLE 95 Connecticut St., Tel. Main 1207
PORTLAND 1238 N. W. Glisan St., Tel. Broadway 1281
DENVER 1700 15th St., Tel. Main 3221

OAKITE *Buy OAKITE for Victory* **CLEANING**
MATERIALS METHODS SERVICE FOR EVERY CLEANING REQUIREMENT

THE WEST ON ITS WAY

GRADING AND PAVING—J. D. Shotwell, Tacoma, received contract between \$100,000 and \$500,000 from U. S. Engineers for grading and paving work in Pierce County.

COKE PRODUCING PLANT—Wilkeson Products Company are starting operation of a modern coke producing plant on Tacoma's tideflats. The plant was recently completed at a cost of \$500,000.

METALLIC MAGNESIUM—The Electrometallurgical Company is just going into production of magnesium on a commercial scale in a plant north of Spokane. When the plant is in operation it is estimated the working force will reach 1,000.

GASOLINE STORAGE SYSTEM—J. W. Bailey, 228 Ninth Ave. N., Seattle, will build an air corps gasoline storage system in Clallam County, Washington. Contract for less than \$50,000 awarded by the Seattle District Office of U. S. Engineers.

CRANBERRY CANNERY—The big Markham Cranberry Cannery destroyed in a \$300,000 fire last December will be rebuilt this year. Every effort will be made to obtain machinery to put it in readiness for operation next autumn, according to M. L. Urann, owner of the plant.

TEMPORARY DWELLINGS—Nettleton and Baldwin, Seattle, will build 700 temporary dwelling units for families of war workers. Contract for \$1,215,000 let by Seattle Housing Authority.

MILITARY SITE CONSTRUCTION—Northwest Pavers, Inc., Spokane, have been awarded contract by Area Engineer, Spokane Area Office, U. S. Army Engineer, Seattle District, for training facilities and surfacing work at military site in Spokane County, Wash., to cost between \$50,000 and \$100,000.

COMMUNITY BUILDINGS—Herbert F. Miller, Bremerton, has been awarded a \$299,000 contract for constructing three community buildings to serve Sheridan Park Housing Project, by Bremerton Housing Authority.

HOSPITAL FACILITIES—Hawkins & Armstrong, 5265 16th N.E., Seattle, will build additional hospital facilities at a military site in Spokane County, Wash. Contract was awarded by Spokane Area Office, U. S. Army Engrs., Seattle Dist., for an amount between \$100,000 and \$500,000.

SEWAGE CHLORINATION AND OUTFALL SEWER—C. V. Wilder, Bellingham, has been awarded contract by U. S. District Engineer Office, Seattle Area, for construction of a sewage chlorination and outfall sewer in Whatcom County, Washington, to cost less than \$50,000.

PUBLIC HOUSING UNITS—Halverson Construction Co., Salem, Ore., will build 100 public housing units in Pasco, Wn. \$196,700 contract let by Pasco Housing Authority, Pasco.

REMODELING HOTEL—Sound Const. & Engr. Co., Seattle, will remodel the New Richmond Hotel, Seattle. Contract for less than \$100,000 let by the U. S. District Engineer Office, Seattle.

BUSINESS BOOKS

• *The Organization and Training of Industrial Fire Brigades*, by Captain John C. Klinck. Expressly prepared for use by fire department officers who are confronted with the problem of organizing and training private fire brigades within industrial plants, storage warehouses and other large buildings. The book's purpose is to provide the instructor with a comprehensive illustrated outline which will help him form and train private fire brigades. Price, \$1.00. Published by S. C. Toof & Company, 195 Madison Avenue, Memphis, Tenn.

• *Workers and Bosses are Human*, by T. R. Carskadon. Shows the productive efficiency of workers to be more closely linked to morale than any other factor. Pamphlet tells why workers join unions—how to handle grievances—how to improve labor-management relations. Price, 10c. Published by Public Affairs Committee, Inc., 30 Rockefeller Plaza, New York, New York.

• *X-Rays in Research and Industry*, by H. Hirst. Describes the types of problems in industry and in research, particularly those problems coming within the field of physical metallurgy for which the application of x-ray methods offer a solution. The most suitable methods of approach to these problems are described in detail. Also the actual practice and calculations of x-ray technique. Price \$2.50. Published by Chemical Publishing Co., Inc., 234 King St., Brooklyn, New York.

• *The Asbestos Factbook*. A compact assembly of facts concerning asbestos. Contains origin, fact, locations, uses, analyses and qualities of asbestos. Price, 10c. Published by Asbestos, 17th Floor Inquirer Bldg., Philadelphia, Penn.

OPPORTUNITY SECTION

Priorities regulations have made it practically impossible to secure new machinery for industrial operations unless a plant is doing 100 per cent work on war projects. Even then, long delays are in prospect. The government is urging full use of existing machinery. Listed here are "machinery opportunities" immediately available here on the Pacific Coast.

FOR SALE USED MACHINERY

No Priority Rating Required

Crimper (Allen-Bradley), Type J-1552, 10 HP, 3 phase, 12" Rolls 50" wide 6 crimps per inch 1/8" depth—Adjustable depth. Good condition—just rebuilt. Price \$500.00

No. 2 Bench Punch (Nfield H. Smith). Fair condition. Price \$ 25.00

Century Converter with Motor (GE). HP3, RPM 1710, Squirrel cage induction, Phase 3, AMPS. PERL 8, No. 642278 TYPE RC 5, Speed 1700, Open HP 3, AMP. 11-8, D.C., Shunt Wound. Good condition. Price \$ 75.00

Power Hack Saw (Wizard), 10" Blade, with motor. Good condition. Price \$ 40.00

Large Cut-off Wood Saw. Fair condition. Price \$ 75.00

Small Bench Lathe, bad condition but can be repaired. Price \$ 30.00

Star Lathe with motor. Made by Seneca Falls Mfg. Co. Good condition. Price \$135.00

Portable Spot Welder (Taylor Winfield). 30 KVA Su. P 1199. Complete with 30' overhead track. Not recent model but practically new. Price \$900.00

Sheldon Lathe No. 11. Complete with motor. Fair condition. Price \$135.00

Arbor Press 4" Tray. New. Price \$ 75.00

Write or Wire

**ELECTRICAL PRODUCTS
CONSOLIDATED**

1016 VIRGINIA ST. SEATTLE, WASH.

TRANSFORMERS

Used and Rebuilt

SINGLE PHASE, 50 OR 60 CYCLE—
2200 TO 110/220 VOLTS

3—1 K. V. A. Westinghouse
3—1 1/2 K. V. A. Westinghouse
2—2 K. V. A. Westinghouse
4—3 K. V. A. Westinghouse
4—5 K. V. A. Westinghouse
3—10 K. V. A. General Electric

SINGLE PHASE, 50 OR 60 CYCLE—
2200 TO 440/220 VOLTS

1—7 1/2 K. V. A. Westinghouse
3—10 K. V. A. General Electric

SINGLE PHASE, 50 OR 60 CYCLE—
440 TO 220/110 VOLTS

4—1 1/2 K. V. A. Westinghouse
8—3 K. V. A. Westinghouse
12—5 K. V. A. Westinghouse
4—7 1/2 K. V. A. Westinghouse
3—10 K. V. A. Westinghouse
1—37 1/2 K. V. A. Westinghouse

We Design - Build - Repair

**JEFFRIES
TRANSFORMER CO.**

1710 E. 57th St., Los Angeles, Calif.

FREQUENCY CHANGER

3 KVA U. S. 60 Cycle to 120 Cycle
PLATING UNIT—M. G. SET
300A/150A 7 1/2-15 Volt Ideal

MOTORS

2 125 HP 900 RPM, GE, KT
1 150 HP 1200 RPM, CS, West.

SLIP RING MOTORS

75 HP 900 RPM 440-Volt Type HV, FM
50 HP 900 RPM 440-Volt Type MT, GE
1 1/2 HP 1200 RPM 220-Volt Type MT, GE

**LITTLEJOHN-REULAND
CORPORATION**

Rewinding 2655 Santa Fe Avenue Repairing
Jefferson 5255 Los Angeles, Calif. Jefferson 5255

WESTERN TRADE WINDS

NEWS ABOUT THOSE WHO DISTRIBUTE AND
SELL INDUSTRIAL EQUIPMENT AND MATERIALS



E. F. Salsbury, president of the Salsbury Corporation, Los Angeles, manufacturers of ammunition tools, industrial power trucks and power cycles, has announced the recent acquisition of the personnel and facilities of the S. B. Coast Tool Company of Huntington Park.

This will permit increased war production work. Mr. Coast will head the precision grinding division of the Salsbury Corporation.

G. H. Waterman, president-manager of Manufacturers' Mineral Company, with headquarters at 1107 West Idaho Street, Seattle, has reported the completion of a new plant at Chewelah, Washington, for washing, drying and screening high class silica sand. Pacific Northwest states and Western Canada will be served from this plant.

The Essick Manufacturing Company, Los Angeles, has purchased the West Coast Pipe and Steel Company. The property is adjacent to Essick's present plant and provides an additional 26,000 square feet of space. The company also recently leased 11,500 square feet of adjoining property for expansion of the certified aircraft welding division. This now gives Essick a total of about 90,000 square feet devoted to the production of essential aircraft products.



Ira G. Perin Co., distributors of Elwell-Parker electric industrial trucks, have moved to larger quarters at 575 Howard Street, San Francisco, after having been located at 200 Davis Street for about 20 years. Mr. Perin started in business in 1916, buying out the United Electric Vehicle Co., who had the Elwell-Parker line.

In the new location there is greater space for parts and for the service department, as well as for offices.

Harry H. Miller, formerly with the Lake Union Dry Dock & Machine Works, has joined the A. J. Goerig Construction Co., Seattle, as purchasing agent and junior partner.

K. F. Forsyth has been appointed manager of California sales for Emsco Derrick & Equipment Co. He has been with Emsco for nearly 20 years, and was moved up from manager of sales of the structural division to the California managership.

The Enterprise Engine & Foundry Company, San Francisco, has appointed **Charles G. Cox**, left, vice president, as general manager of the Diesel engine and



manufacturing divisions, and **Serge P. Kovaleff**, right, in charge of plant production. Both of these men have long been identified with the Enterprise organization.

Charles G. Munn, president of Reynolds Spring Company, Jackson, Michigan, has announced the purchase of the Fabriform Steel Products Company, 4900 Cecilia Street, Bell, California. The business will be operated under the name of Reynolds Spring Company, Fabriform Division. Two of the former partners and the personnel of Fabriform will remain with the Division.

E. L. Mathy, who has been elected president of the San Francisco Sales Managers' Association, predicts a large expansion of export business with both Latin America and transpacific areas after the war. Other officers elected by the association include: J. E. Holbrook, William Collier and D. H. McClinton, vice-presidents; A. E. Little, treasurer, and V. P. Strite, secretary.

Bert Deleray has been appointed district manager of the San Francisco office of the Tri-State Supply Corporation.



Mr. Deleray stepped into this new job after many years of selling experience in the electrical field. Several years after World War I—he has an honorary commission as First Lieutenant Engineer, E.O.R.C.—he turned from mining to selling, and in 1926 joined the Lamp Division of the Westinghouse Company as a salesman. From 1937 to date he has been Los Angeles manager for the Division.

The Stephens-Adamson Manufacturing Company boast one of the first and largest employee Victory Gardens in the heart of the industrial area of Los Angeles. Seeing some one and one-half acres of unused land that would be splendid for growing vegetables, officials of the company discussed the matter with members of the organization. It met with hearty approval with the result that the company immediately had the ground plowed, and arranged for the water supply. The land was then "sub-divided" and each worker has his own plot of ground where he can plant what he desires, and take care of it before work, after work, during the lunch hour, or on his day off.

Johnston

**STAINLESS
STEEL
WELDING
RODS**

A.P. Johnston

1845 EAST 57th ST. LOS ANGELES, CALIF.
TELEPHONE KIMBALL 2508

YOURS FOR THE ASKING

1231

Adjustable Spacers—A fixture for milling machines which permits an adjustment in length of approximately one-half inch. Spacers are made of alloy steel, hardened and ground and accurately threaded and finished. Bulletin explains set-up and gives specifications. *David J. Ross Co., Benton Harbor, Mich.*

1232

Manganese Steel—Bulletin 1142-SM contains 48 pages describing manganese steel and the part it plays in the war picture. It is divided into sections covering the use of "the toughest steel known" in the blast furnace department, the coke plant, the rolling mill and foundry. It also gives a proved method for reclaiming spindles, crabs and coupling boxes by employing Amsco V-Mang build-up welding rod followed by the application of Amsco Hard-face welding rod. *American Manganese Steel Div., The American Brake Shoe & Foundry Co., Chicago Heights, Ill.*

1233

Di-Arco Units—A 32-page booklet, "Metal Duplicating Without Dies." Lists, pictures and describes products with operation thoroughly explained. Points out that over 100,000 parts not practical for dies are made with this equipment. *O'Neil-Irwin Mfg. Co., Minneapolis, Minn.*

1234

Turret Mill—Twelve-page booklet contains many illustrations showing the equipment and its operation. A special operation chart is included. *Rogers Machine Works, Inc., 125 Arthur St., Buffalo, N. Y.*

1235

Identification Stamps—The various types of inspection stamps available for industry are shown in Bulletin S-146. Descriptions are given along with the use for which they are best suited. *Jas. H. Matthews & Co., 3942 Forbes St., Pittsburgh, Penn.*

1236

Lighting Handbook—A new government manual and price schedule on lamps and lighting has been issued for distribution to government procurement agencies, purchasing personnel and government lighting engineers. Designed to present the essential facts of productive wartime lighting, the handbook analyzes the five main types of lighting requirements and the efficiency and economy with which the types of reflector lamps meet modern problems. *Birdseye Electric Corp., 335 Carroll St., Brooklyn, N. Y.*

1237

Thermometers—Five bulletins available describing a complete line of industrial, indicating, recording and control thermometers. Bulletin G23-2 discusses operating principle and gives information to aid in selection of proper instrument. Bulletin G503-2 covers the recording control, and G603-2 the indicating control. Both discuss the "electronic principle." Bulletin G303-2 describes and gives applications for the indicating thermometer and G403-2 tells about the recording thermometer. *Wheeler Instruments Co., Harrison and Peoria, Chicago, Ill.*

You owe it to yourself to keep posted—only the efficient business survives under the strain and pressure of the war effort. Literature listed in these columns may be just the answer to your need for greater production, substitute materials or knowledge of how to care for your equipment. Just drop a note to Western Industry, 503 Market St., San Francisco, and copies will be forwarded to you. If you do not use business letterheads, please name your company affiliation.

1238

Visual Learning Guides—Folder tells why guides increase the effectiveness of films used to educate workers in the operation of machinery and how it speeds progress. Visual learning guides enable a student to learn more quickly and accurately, and with it, the individual gains a valuable familiarity with a given subject before he sees a film. After a film has been seen, the student tests himself on what he has seen and discovers and corrects his mistakes. A list of the subjects covered is included. *National Audio-Visual Council, Inc., 160 North La Salle St., Chicago, Ill.*

1239

Patent Research—Booklet tells why small manufacturers, as well as large ones, should maintain consistent patent research during war

time. It points out that currently issuing patents are more than the first available details of U. S. inventions worth protecting. New patents give valuable current information because they are held in strict secrecy by the U. S. Patent Office before patents issue. *Invention, Inc., Barrister Bldg., Washington, D.C.*

1240

Pneumatic Die Cushion—Installation instructions and service manual. Booklet clarifies the principles of die cushion. Gives simple, detailed description of equipment as to its construction, operation, care and use together with a limited number of representative installations in connection with deep drawing operations: pressure pad control or forming dies and stripper pad control on compound blanking and piercing dies. *Dayton Rogers Mfg. Co., 283 Twelfth Ave. South, Minneapolis, Minn.*

1241

Bushings and Bearings—An 84-page catalog listing sizes and prices of hundreds of finished bronze bushings and porous oil-retaining bearings. Widely used in the aviation industry, these bearings and bushings find wide application in practically all phases of machine manufacturing. *Atlas Brass Foundry, 1901 Santa Fe Avenue, Los Angeles, Calif.*

1242

Asbestos-Protected Metal—Spiral-bound 25-page booklet gives history of Felt-Cote used for roofs and sidings for industrial buildings. Shows sections of the sheets and includes instructions on how to specify. Illustrations of applications are included. A general diagram and details of Felt-Cote construction is attached. *Felt-Cote Division, American Steel Band Co., Pittsburgh, Penn.*

1243

Technical Books—A 64-page catalog with a brief resume about each book. Table of contents lists aeronautics, chemistry, electricity, mathematics, metals and metal working, along with 16 other subjects. Includes an index. *Chemical Publishing Co., Inc., 236 King St., Brooklyn, New York.*

1244

Oilseals and Greaseals—Bulletin presents the latest detailed information, recommendations, applications, diagrams, listings and prices. Oilseals solve the many problems of sealing oil around a rotating shaft. *Gits Brothers Mfg. Co., 1846 So. Kilbourn Ave., Chicago, Ill.*

1245

Hand Cleansing—Folder illustrates proper way to wash hands with Lan-O-Kleen, a specially designed industrial hand cleanser containing lanolin. Points out that properly cleansed hands help to prevent skin infections. *Wm. Disinfecting Co., 42-16 West St., Long Island City, New York.*

1246

Steel Castings—Bulletin 801 contains 40 pages describing in detail the manufacture and application of electric furnace steel castings, carbon-steel castings, alloy-steel castings, iron castings, non-ferrous castings; the machining, heat-treating and tempering of such castings, with numerous illustrations. *The Emco Corporation, 634-666 South Fourth West St., Salt Lake City, Utah.*

1247

Dustproof Floors—A new transparent penetrating liquid which permanently dustproofs concrete floors; also makes them waterproof and crumpleproof. Applied by placing liquid in a pail or watering can, flushing it on the floor and sloshing it around evenly with brush until concrete will not absorb any more. Folder gives facts and uses. *Etercrete Corporation, 19 West 44th St., New York, New York.*

TENITE^{an} EASTMAN PLASTIC

☆ *Headquarters for Ideas* ☆

ON THE USE OF PLASTICS

For war needs now and for planning postwar products ... send for illustrated booklet describing Tenite applications and properties.

WILSON & GEO. MEYER & CO.

LOS ANGELES SAN FRANCISCO SEATTLE

THE SHOWCASE

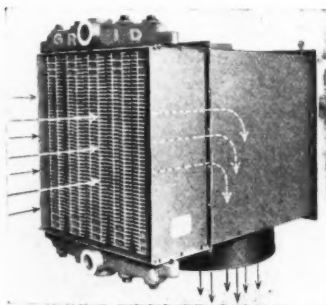
Mirror Glass Reflectors—Improves yard lighting for industrial plants while conserving war-needed aluminum, and provides about ten per cent more illumination. Mirror glass reflects more light than aluminum and extends below a globe clamping ring which formerly blocked off part of the reflected light. *Westinghouse Electric & Mfg. Co., East Pittsburgh, Penn.*

Oil Window Unit—Especially devised for conveniently indicating oil level when the unit is installed in a built-in oil reservoir casting. Consists of a window of clear



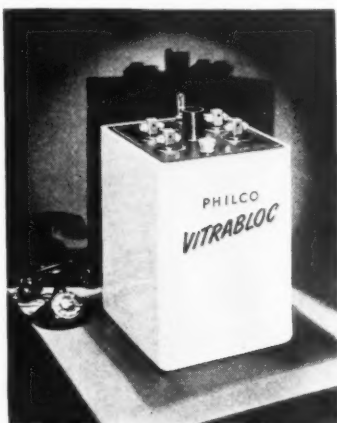
plastic assembled in a polished metal housing. A special oil-proof synthetic gasket insures oil-tightness between window and frame. Two holes in the metallic background give easy passage to the oil. *Bijur Lubricating Corp., 43-01 - 22nd St., Long Island City, N. Y.*

Unit Heater—The down-blow principle has been added to the construction of the "Grid" unit heaters, whose sections are



made of high test cast iron. Arrows indicate the flow of air into, through and out of the unit. Special features include protection of the motor from the heat of the unit itself, preventing burning out of the motor. *D. J. Murray Mfg. Co., Nansau, Wisc.*

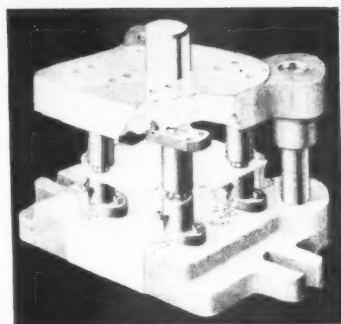
Vitrabloc Batteries—Composed entirely of non-critical materials and available on an A-3 priority. Offers the same capacities



and almost all the advantages of the rubber jar battery developed for telephone and stand-by use. Will not absorb moisture, nor will acid penetrate or affect it. Pure white, it gives engineers high-light reflection in dark battery rooms. Because of its glassy surface and spray-proof funnel vents, the jar is kept clean with little attention. Explosion-proof. *Storage Battery Division, Philco Corp., Trenton, New Jersey.*

Pressure Grease—A new grease compounded expressly for use with pressure systems. Manufacturer claims that a recent laboratory test shows the new grease to be free from alkalis and acids, that it deposits no carbon, and that it has good lubricating properties at high or low temperatures. Literature available from *Scientific Lubricants Co., Dept. F., 3462 No. Clark St., Chicago, Ill.*

Hole Punchers—For use in conventional die sets. The punch unit half contains a punch with a pilot, holder, stripping spring and guide. The die unit half consists of a holder with a slug clearance



chute and die. Each unit is self contained and mounted independently to either punch or die shoe. A pilot pin is centered on the punch or die to assure perfect punch and die alignment. Punches holes from 1/16 to an inch diameter in metal up to 11 gauge. *The Strippit Corporation, North Tonawanda, New York.*

Flame Hardening Machine—Electrical control and hydraulic power as a motive source provide flexible operation. Parts which require adjustment and routine maintenance are on the outside. Pilot light, burners and water coolant located on rear slide and are adjustable together with proper shielding which directs flame and the water to exact surface desired. Working parts are adequately shielded from the



heat. Water is used as a quenching medium and is completely sealed from the actuating mechanism. *Hydraulic Machinery Inc., 10421 Grand River, Detroit, Mich.*

Yessir!

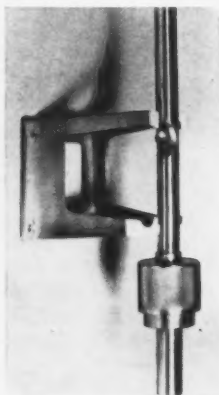
I'm Interested in Anything New That Will Help Me Do a BETTER JOB.

WESTERN INDUSTRY
503 Market Street
San Francisco

Please send me information on the following items:.....

Name..... Title.....
Company.....
Address.....

Burr Remover—A simple, efficient tool which removes burrs or sharp projections from the edges of drilled, reamed or bored holes in one operation. It can be handled by anyone on any machine. According to the manufacturer, 45 seconds is all that is



required for an operation which formerly took 20 minutes. *Nobur Manufacturing Company, 6156 Santa Monica Blvd., Los Angeles.*

Cutter-Grinder—It will grind any concave, convex, helical, straight, tapered, angle or special cutter up to six inches in



diameter and any saw up to 18 inches in diameter, regardless of cutting angle required. The dividing head has seven index circles consisting of micrometer placed holes or stops which insure perfect uniformity of cutting edges in the finished cutter, regardless of the number of teeth of cutting surfaces. Bench-type machine, 21 inches long and weighs approximately 135 pounds. *Berco Manufacturing Co., 429 West Superior St., Chicago, Ill.*

Hydraulic Press—Adjustable, and especially designed for truck axle manufacturing. Suited to heavy steel fabrication work, this press develops over 100 tons of pressure for putting an accurate camber in axles, straightening heavy steel bars and flats and a variety of other uses required

by industry. One feature is the adjustable ram which can be located accurately at any desired point over the machined surface of the bed within a distance of 22 inches laterally and 80 inches longitudinally. *Kay-Brunner Steel Products, Inc., 2721 Elm St., Los Angeles, Calif.*

Locking Studs—A simple ring with serrations inside and out has been developed which can be adapted to any function per-



formed by ordinary studs and inserts. Results of tests made indicate that insert is capable of withstanding desired loads, and that it is stronger than the bolt that is screwed into it when installed in magnesium alloy and aluminum alloy. Has many applications. The stud differs not at all from an ordinary stud, except for the collar or portion equipped with teeth. It is installed like an ordinary stud, being screwed in until the top flange of the serration is flush with or slightly below the surface of the material. The ring then falls into place, and with the special tool or a short length of bar steel bored to clear the stud, the operator drives the ring into place. *Bardwell and McAlister, Hollywood, Calif.*

WIRE ROPE

Wire Rope—Manila Rope—Tackle Blocks
Sheaves—Chain and Coffing Hoists
Shackles—Turnbuckles—Splicing
V-Belt and Roller Chain Drives
Alumite Guns—Plomb Tools
Fiege Electrolite Wire Rope Fittings
Safe-Line Clamps—Safety Clips
Genuine Crosby Wire Rope Clips

★

LARKIN-POWELL CO.

INDUSTRIAL and RIGGERS SUPPLIES

2328 Santa Fe Ave.

Kimball 7261

Los Angeles

INDEX TO ADVERTISERS

In This Issue . . .

Advertiser	Page
Albina Engine & Machine Works	30
Associated Indemnity Corp.	36
Atlas Brass Foundry, Inc.	7
California Barrel Co., Ltd.	3rd Cover
Chain Belt Company	5
Crocker First Nat'l Bank	31
Cunningham Steel Foundry	42
Daniels, C. R., Inc.	31
Downs Crane & Hoist Co.	36
Durant Mfg. Company	31
Elastic Stop Nut Corp.	21
Electrical Products Consolidated	36
Farval Corporation	31
Fishstrom Staple Company	32
Fiske Bros. Refining Company	25
Goodall Rubber Company	34
General Metals Corporation	25
Jeffries Transformer Co.	38
Johnston, A. P., Co.	39
Larkin-Powell Company	42
Littlejohn-Reuland Corp.	38
McCarty Company, The	32
Oakite Products, Inc.	37
Pacific Gear Works	17
Plastics Institute	31
Premier Oil & Lead Works	19
Standard Oil Co. of Calif.	27
Stauffer Chemical Co.	35
Stephens-Adamson Mfg. Co.	4th Cover
Sylvania Electric Products, Inc.	4
Tidewater Associated Oil Co.	12
Timber Engineering Company	10
Tri-State Supply Corporation	6
Union Oil Company	1
Victor Equipment Company	2nd Cover
West Disinfecting Company	28
Wickwire-Spencer Steel Co.	9
Wilson & George Meyer & Co.	40



CARBON and ALLOY

ELECTRIC STEEL
CASTINGS

Cunningham
STEEL Foundry

4200 WEST MARGINAL WAY, SEATTLE

Page	
.....	30
.....	36
.....	7
Cover	
.....	5
.....	31
.....	43
.....	31
.....	36
.....	37
.....	21
.....	36
.....	37
.....	37
.....	25
.....	34
.....	25
.....	38
.....	39
.....	42
.....	34
.....	32
.....	37
.....	17
.....	31
.....	19
.....	27
.....	35
h Cover	
.....	4
.....	12
.....	10
.....	6
.....	8
d Cover	
.....	28
.....	9
.....	40

EL



, 1943

It takes food a
fighting men in
carrots and sau
in New Caledo

Page
36
36
7
Cover
5
31
43
31
36
31
21
34
31
38
29
34
25
38
39
41
36
32
37
17
31
19
27
35
Cover
4
12
10
6
8
Cover
28
9
40



BCO
Loop
eners

"H
the
the
han
bo
the

Re
C

Sub
(an

It takes food and plenty of it to keep Uncle Sam's fighting men in trim. These cases... largely canned carrots and sausage in the foreground were piled on a New Caledonia dock preparatory to distribution.

(U. S. Navy Photo from Acme)



Perishables: Handled WITHOUT care...

During wartime, normal handling precautions are discarded luxuries, "Handle with Care" labels mean very little to the stevedores at the ports of debarkation. Thus the shipping container comes in for rather brutal handling.

Under the toughest of conditions Cabco Allbound Crates are bringing home the bacon for the fighting forces throughout the world. These

scientifically designed boxes and crates are ideal in every respect: 1) light

weight because they are made of thin wood veneer, 2) great strength because they are stitched together with steel wire, 3) easy to handle, because they come to you in one piece complete, can be set up packed and closed for shipping with your bare hands... no hammer, no nails needed. Cabco's come to you as a unit... sides, ends, bottom and top, yet they are flat, requiring the minimum of storage space.

No matter what you are shipping... beans or bullets, canned food or machine guns... there's a Cabco Allbound Container to do the job.

Remember this fact

CABCO

ALLBOUND Crates and Boxes bring 'em through

Submit your container problems to Cabco engineers but (and we're sorry) unless you have the highest of priorities don't expect too prompt service.

California Barrel Company, Ltd.

2581 E. Eighth Street
Los Angeles

100 Bush Street
San Francisco, California

501 Dooley Bldg.
San Jose, Calif.

RETURN POSTAGE GUARANTEED

WESTERN INDUSTRY

503 MARKET STREET
SAN FRANCISCO, CALIF.

FORM 3547

POSTMASTER:

If addressee has removed, notify
sender on Form 3547, postage for
which is guaranteed.
503 Market Street, San Francisco

SEC. 562, P. L. 86-1
U. S. POSTAGE

PAID

San Francisco, Calif.
Permit No. 4167

12 Years of Service...

prove S-A low-maintenance equipment
the most economical method of
moving tonnage in this warehouse!



● Here's another outstanding example of the Stephens-Adamson solution to handling problems. An S-A overhead belt conveying system, fed by S-A bucket elevator loaders equipped with loading hoppers and crushers and S-A portable pilers forms the basis of this potash-handling system which has cut handling costs, saved time and labor, over a 12 year period. This worked so well that in 1934 a similar but larger unit was installed.

● In buying Material Handling Equipment, "IT'S THE COST PER TON OVER THE LIFE OF THE EQUIPMENT THAT COUNTS." The two most important factors which determine the cost per ton of handling bulk material with Conveyors, Elevators, Feeders, and auxiliary equipment are (1) the engineering or design of the installation, and (2) construction, or quality and workmanship of the conveyor equipment.

The long experience of individual S-A engineers and workmen, and their reputation for being the first with new ideas, insure our ability to handle your material at the LOWEST POSSIBLE COST. May we submit our recommendations on your next requirement, without obligation?

STEPHENS-ADAMSON MFG. CO.

2227 E. 37th ST., LOS ANGELES, CALIF.

582 Market St., San Francisco, Cal. 668 No. Tillamook, Portland, Ore.
1203 Western Ave., Seattle, Wash. 214 Dooly Bldg., Salt Lake City

STEPHENS-ADAMSON CONVEYORS

